Tenth Annual Report

OF THE

HYDRO-ELECTRIC POWER COMMISSION

OF THE

PROVINCE OF ONTARIO

FOR THE YEAR ENDED OCTOBER 31st

1917

VOLUME III.

PRINTED BY ORDER OF

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1918

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To His Honour, COLONEL SIR JOHN HENDRIE, K.C.M.G., C.V.O.,

Lieutenant-Governor of Ontario.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to present to Your Honour the third volume of the Tenth Annual Report of the Hydro-Electric Power Commission of Ontario for the fiscal year ending October 31st, 1917.

Respectfully submitted,

ADAM BECK,

Chairman.

TORONTO, ONT., February 12th, 1918.

COLONEL SIR ADAM BECK, K.B., LL.D.,

Chairman, Hydro-Electric Power Commission,

Toronto, Ont.

SIR,—I have the honour to transmit herewith the third volume of the Tenth Annual Report of the Hydro-Electric Power Commission of Ontario for the fiscal year ending October 31st, 1917.

I have the honour to be,

Sir,

Your obedient servant,

W. W. POPE,

Secretary.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

COLONEL SIR ADAM BECK, K.B., LL.D.

HONOURABLE I. B. LUCAS, M.P.P.

COLONEL W. K. McNAUGHT, C.M.G.

W. W. POPE, Secretary.

F. A. GABY, Chief Engineer.

HYDRAULIC INVESTIGATIONS AND CONSTRUCTION

STREAM FLOW MEASUREMENT

The flow measurements of the streams of the provinces during the year October 1, 1916, to September 30, 1917, have embraced practically the same waters as were under survey during the previous year. The most advantageous section established during the year was that on the Mattagami River, below the plant of the Mattagami Pulp and Paper Company, at Smooth Rock Falls. It is expected that this section will result in better estimates of stream flow for any tributary of the James Bay rivers than any heretofore secured. This is only the first of several rivers in the James Bay slope it is desired to bring under continuous and systematic observation. Unfortunately the work is handicapped at its present stage on account of the necessary reductions coming at a time when the organization for this work was capable for the first time of being in a position to adequately carry it forward.

In being obliged to limit the expenditure to the sum available, the importance of the continuity of records of water elevations will have to be considered greater than the close rating of the sections. This principle, together with the view that winter measurements at sections, where a rating curve is defined, are of more value than open water measurements at such sections, will govern the hydrometric expenditure of the coming year.

The percentage the run-off bears to the precipitation for the purposes of calculation of stream flow is of questionable value for application for other years than the one under consideration for any district. It may, however, be of service for assisting in estimates of flow for that particular year for other streams in the same district, and for this reason the percentage of run-off to precipitation is published for stations where the estimates of flow and precipitation for a whole year are available.

The year for which hydrometric data is published in this report has nothing on record of marked occurrence. The figures of flow for streams in that part of the province draining into the Winnipeg River are in closer agreement than those for any other section of the province. This is to be expected from the larger drainage areas, the weather conditions in winter being less liable to changes affecting the run-off, the uniformly good natural storage basins, and the well rated gauging stations. The weather conditions in the southwestern part of Ontario, in winter, cause fluctuations in the run-off, making close measurement of the latter more difficult than in localities with more fixed winter conditions.

At fifty-seven stations on the rivers of the province the stream flow has been under regular observation, and the data secured for the year is published herewith. For reasons mentioned above, some stations have been withdrawn from the list of those under regular observation. The selection of such stations has been a matter of considerable difficulty, but it is hoped that those finally decided upon will prove to be the ones of least value.

With the object of bringing the publication of stream flow data under the same water year as that adopted by Federal and other sources, the year October 1 to September 30 will be used by the Commission in future publications.

POWER AND STORAGE SURVEYS

General

During the past year a number of detailed surveys in connection with contemplated power construction have been made. In addition, reconnaissances were made at certain locations where there was not sufficient time available or the importance of the work did not justify more extensive surveys. These reconnaissances furnished the necessary information for the preparation of estimates and the compilation of reports on possible developments on the Ottawa River between Lakes Temiskaming and Mattawa, on the Driftwood River at Monteith, on the Sydenham River at Alvinston, and at the Notch on the Montreal River.

With the aid of the information secured in the field and that already available from other sources, estimates have been prepared on these projects. If it is desired to proceed with construction on certain of these at a later date, the additional topographic and hydrographic data can be readily secured.

Meaford

Under date of August 15, 1917, the Commission, on request of the Council of the Municipality of Meaford, authorized the giving of assistance to the town in connection with estimating the cost of a local power development to be located on Big Head Creek. Surveys were therefore initiated in October, covering possible dam sites, power-house site, contours of the storage area above the dam, and a reconnaissance of possible reservoir areas on the upper head waters.

These surveys have now been completed, and the results plotted. Preliminary plans are being prepared on which estimates can be based. On the completion of these plans, estimates of cost will be made and a report drafted for presentation to the municipality.

Nipigon River

In October, 1917, arrangements were made for surveys of the lower power sites on the Nipigon. A party was organized and work was started on October 17th. The results of this work are not yet available. Instructions were issued to this party to make the necessary surveys covering a possible development at Cameron's Pool proper, and also to determine the possibility of developing the total available head at Camp Alexander, which would include the Cameron's Pool proposition. From data now available it is expected that the results of the survey will demonstrate the feasibility of a development combining the several rapids above and below Cameron's Pool under a total head of approximately 117 feet, with a possible ultimate capacity of 100,000 horse-power.

French River

The possible power developments on the French River are three in number, dependent in location on the construction plans of the contemplated Georgian Bay Ship Canal. The proposed scheme of canals entails the construction of three locks between Lake Nipissing and Georgian Bay. The Chaudiere lock will have a lift of 24 feet, the Five Mile lock a lift of 24 feet, and the Dalles lock a lift of 21 feet, making a total available head of 69 feet. With a view to obtaining more adequate data on which to base estimates for contemplated power developments on the river,

surveys were made during the summer of 1917 to supplement the information available in the Georgian Bay Ship Canal Report. These surveys covered the two upper sites at the Chaudiere and the Five Mile Rapids. While no work was done at the Dalles, the field surveys and the later office investigations appear to demonstrate that the most advantageous scheme of development would be to install the Chaudiere development first, then to proceed to the installation for the Dalles site, as the use of the Five Mile site entails the raising of the tailwater level at the Chaudiere by about six feet. The initial development at Chaudiere would therefore be for a head of about 30 feet.

The field surveys at the Chaudiere and the Five Mile sites demonstrated that development at these locations was in both cases quite feasible, and that at the Chaudiere an installation approximating 13,000 horse-power could be made at a reasonable cost under present market conditions.

Trent River Storage

A start has been made on the compilation of the existing data concerning the flow of the waters tributary to the Trent River. The Commission has to date taken few measurements of the flow of these streams, and what data is available is that secured by the officers of the Department of Railways and Canals.

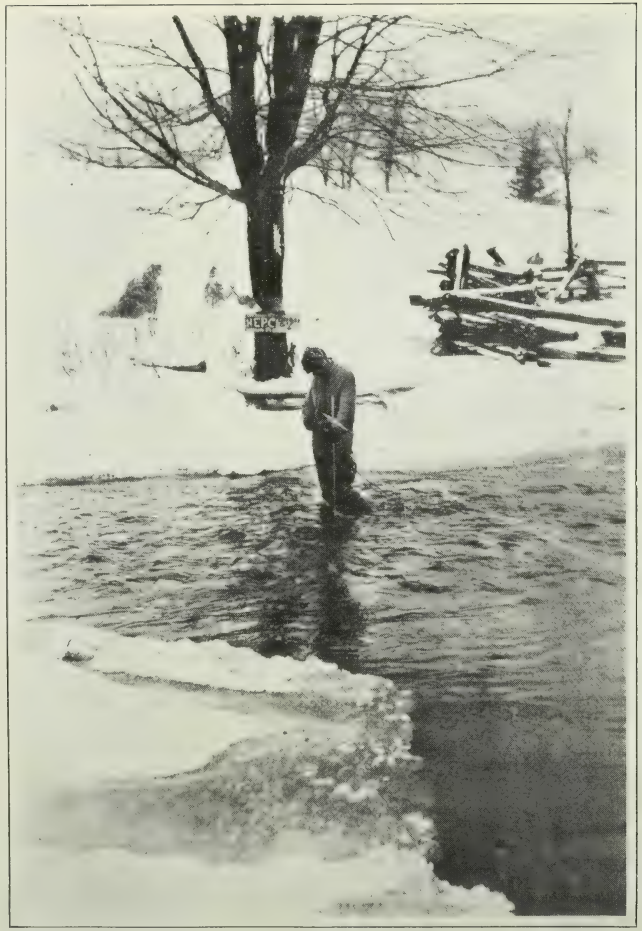
A reconnaissance of the storage sites as yet not developed on the Mississauga River and Jack's Creek has been made and the utility of further storage of the waters on these basins may become apparent when fuller information as to run-off is obtained.

Mississippi River Improvement Co. Arbitration

Upon complaint of the Galetta Electric Light & Power Co., under the terms of The Improvement Company's Act of Incorporation, the Commission held two hearings of parties interested in the charges made against the power owners on the river for storage water supplied by the company's works.

The Commission's engineers, in connection with this investigation, made a trip over the river between Carleton Place and the Ottawa River and also visited the sites of the company's dams on the upper part of the river, besides some possible sites for future reservoir dams.

On the basis of the investigation in the field, and the evidence submitted at the hearings, a set of recommendations was prepared covering what was considered to be a fair and practicable method of adjusting and regulating tolls for storage water on the Mississippi River.



Metering Section Showing Winter Conditions on the Beaver River near Kimberley.

Metering Section Showing Winter Conditions on the Saugeen River near Port Elgin.

Regular Stations

EASTERN ONTARIO DISTRICT

River	Location	Drainage Area Sq. Miles	Township	County or District
Black	near Washago	585	Rama	Ontario
Bonnechere	at Renfrew	910	Horton	Renfrew
Madawaska	at Claybank	3,210	McNab	"
"	at Madawaska	800	Murchison	"
Maganetawan, north.	near Burk's Falls	107	Armour	Parry Sound
" south.	" " "	257	"	"
Mississippi	at Ferguson's Falls	1,042	Drummond	Renfrew
"	at Galetta	1,456	Fitzroy	Carleton
"	near Snow Road	446	Sherbrooke	Lanark
Moira	near Foxboro	1,038	Thurlow	Hastings
Muskoka, north	near Port Sydney	560	Stephenson	Muskoka.
" south	at Tretheway's Falls	668	Draper	"
Napanee	near Napanee	300	Camden	Addington
Petawawa	near Petawawa	1,572	Petawawa	Renfrew
Seguin	near Parry Sound	380	McDougall	Parry Sound
Tay	near Glen Tay	204	Bathurst	Lanark
York	near Bancroft	374	Faraday	Hastings

Black River near Washago

Location—At the highway bridge known as Kennedy's Bridge, about 5 miles southeast of the Town of Washago, on lot 1, concession G, Township of Rama, County of Ontario.

Records Available—Discharge measurements at first bridge from August, 1913, to January, 1914. Discharge measurements at Kennedy's Bridge from February, 1914, and daily gauge heights from May 5, 1915.

Drainage Area—585 square miles.

Gauge—Vertical staff 0 to 12 feet on tree on left bank. Water elevations referred to a B.M. (elevation 30.00) on tie rod on downstream side of bridge.

Channel and Control—The channel is straight for 150 feet above and 700 feet below the gauging section. The banks and control can be considered permanent, as the velocity here is never very high. The bed of the stream is composed of rock.

Discharge Measurements—Made from the bridge and wading section at low water.

Winter Flow—Owing to the somewhat sluggish flow at this section, ice from December to March forms to a great thickness, and relation of gauge height to discharge is seriously affected during that period. Measurements are made to determine the winter flow.

Regulation—The flow at this section during May, June and July is controlled to a large extent by logging dams above. The operation of gates at these dams causes fluctuations in gauge heights, amounting to several feet at the gauge. At times logs lodge below section, causing considerable backwater.

Accuracy—For three months in the early summer the river stage is subject to large fluctuations, and the accuracy of the discharge depends upon accuracy of mean daily gauge heights. Rating curve not well defined at all stages.

Observer—Pearl Carrick, Washago.

Discharge Measurements of Black River near Washago in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 3....	Yeates, W.	31	43	1.09	19.80	47	.....
1917							
Jan. 4....	Roberts, E.	119	580	1.18	23.00	688 (a)	.....
Feb. 19...	"	95	350	.58	21.79	201 (b)	.....
Mar. 22....	"	95	372	.78	22.00	290 (b)	.....
April 10....	"	119	1,262	3.10	28.42	3,914 (c)	.....
May 10....	Campbell, L. L..	119	796	2.00	24.42	1.589	.....
June 20....	" ..	119	543	.81	22.33	438	.....
July 26....	Ronald, F.....	119	436	.69	21.58	299	.....
Aug. 24....	"	98	401	.40	21.00	161	.....
Sept. 26....	"	48	66	1.32	20.02	87(d)	.....

(a) Ice measurement. Some velocities estimated.
(b) Ice measurement.
(c) Surface velocities recorded and co-efficient applied. Debris made vertical observations impossible.
(d) Reading taken at wading section 500 feet above gauge.

Daily Gauge Height and Discharge of Black River near Washago, for 1916-7

Drainage Area 585 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	19.92	51	22.44	575	23.77	1150	23.90	1140	22.38	330	21.87	220	28.33	3880	24.48	1560	23.46	1000	21.90	390	21.25	220	20.71	128
2	19.90	50	22.61	645	23.81	1180	23.37	860	22.38	330	21.87	222	28.67	4080	24.48	1560	23.71	1120	21.52	280	21.83	369	20.69	126
3	19.88	49	22.73	690	23.69	1110	23.15	800	22.33	345	21.85	222	28.82	4170	24.50	1570	23.42	980	21.73	339	22.13	459	20.67	124
4	19.83	47	22.79	715	23.56	1050	22.85	685	22.33	345	21.85	222	28.97	4260	24.42	1520	23.73	1130	21.98	414	22.00	420	20.63	119
5	19.79	46	22.85	740	23.94	1240	22.75	640	22.33	345	21.77	204	29.12	4350	24.54	1590	23.48	1010	22.14	462	21.92	396	20.60	116
6	19.73	43	22.83	730	24.58	1620	22.71	620	22.33	345	21.79	206	29.12	4350	24.77	1730	24.04	1290	22.06	438	21.79	357	20.60	116
7	19.71	42	22.79	715	24.60	1630	22.90	600	22.17	288	21.77	200	29.10	4340	24.56	1610	23.46	1000	22.19	477	21.71	333	20.56	112
8	19.71	42	22.81	725	24.46	1550	22.75	560	21.98	240	21.75	198	29.06	4320	24.67	1670	23.29	915	22.38	550	21.60	300	20.52	107
9	19.79	46	22.79	715	24.42	1520	22.56	480	21.96	230	21.85	220	28.81	4170	24.56	1610	22.88	750	22.54	615	21.69	327	20.50	105
10	19.79	46	22.96	785	24.71	1700	22.65	475	21.96	230	21.85	220	28.46	3960	24.46	1550	22.58	630	22.50	600	21.72	336	20.46	101
11	19.73	43	23.14	855	24.69	1650	22.71	500	21.96	230	21.85	220	27.71	3510	24.35	1480	22.44	575	22.98	790	21.65	315	20.46	101
12	19.71	42	23.25	900	24.67	1630	22.71	505	21.87	210	21.87	224	27.48	3370	24.27	1430	22.31	525	23.02	810	21.56	290	20.42	97
13	19.73	43	23.27	910	24.60	1590	22.54	420	21.89	230	21.83	216	27.19	3190	24.14	1350	22.21	484	22.94	775	21.46	265	20.40	95
14	19.90	50	23.11	845	24.37	1450	22.58	429	21.85	220	21.85	220	26.73	2920	24.17	1370	22.13	459	23.17	870	21.40	250	20.42	97
15	20.13	62	22.96	785	24.62	1590	22.46	396	21.85	220	21.87	220	26.17	2580	24.02	1280	22.21	484	23.21	885	21.33	236	20.40	95
16	20.19	65	22.98	790	24.92	1770	22.46	396	21.83	214	21.83	216	25.71	2310	24.04	1290	22.15	465	23.00	800	21.27	224	20.37	93
17	20.60	100	22.87	750	25.06	1840	22.46	399	21.77	200	21.90	230	25.44	2130	24.17	1370	22.12	456	22.71	685	21.25	220	20.40	95
18	20.94	141	22.79	715	24.98	1780	22.42	381	21.81	210	22.02	255	25.19	1980	24.44	1530	22.04	432	22.50	600	21.21	212	20.40	95
19	21.08	170	22.69	675	24.75	1670	22.37	375	21.77	200	22.08	275	25.21	2000	23.83	1190	22.08	444	22.46	585	21.21	212	20.35	91
20	21.87	381	22.61	645	24.77	1670	22.37	375	21.81	210	22.02	262	25.27	2030	23.31	925	22.19	477	22.25	500	21.21	212	20.33	89
21	22.90	755	22.52	610	24.71	1640	22.29	360	21.79	210	22.02	265	25.29	2040	23.14	855	22.12	456	22.08	444	21.17	204	20.29	86
22	23.08	835	22.40	560	24.71	1650	22.29	357	21.73	196	22.10	278	25.54	2200	23.29	915	22.21	484	21.97	411	21.12	194	20.25	84
23	22.96	780	22.36	545	24.77	1670	22.29	354	21.79	210	22.31	339	25.62	2250	23.50	1020	21.92	396	21.60	300	21.10	190	20.25	84
24	22.67	660	22.61	645	24.75	1660	22.29	354	21.85	220	22.58	435	25.77	2340	23.54	1040	22.02	426	21.63	309	21.06	182	20.17	78
25	22.50	595	22.61	645	24.89	1730	22.29	351	21.81	210	23.08	620	25.79	2350	23.75	1150	22.12	456	21.65	315	21.04	178	20.08	74
26	22.46	580	22.58	630	24.90	1740	22.29	351	21.89	230	24.25	1420	25.73	2320	23.73	1130	22.12	456	21.58	295	21.04	178	20.15	78
27	22.42	565	22.54	615	24.98	1780	22.29	348	21.94	240	28.00	3680	25.56	2210	23.60	1070	22.00	420	21.48	270	21.02	174	19.94	67
28	22.52	600	22.67	670	24.71	1600	22.29	342	21.92	230	28.10	3740	25.14	1950	23.75	1150	21.85	375	21.38	246	20.94	161	20.04	72
29	22.52	600	22.71	685	24.37	1390	22.29	330	.....	.....	28.20	3800	24.77	1730	23.52	1030	21.71	333	21.35	240	20.94	161	20.11	80
30	22.56	615	23.36	950	24.31	1370	22.38	330	.....	.....	28.30	3860	24.46	1550	23.46	1000	21.88	384	21.27	224	20.85	148	20.15	78
31	22.52	600	.....	.....	24.21	1310	22.38	330	.....	.....	28.46	3960	.....	....	23.29	915	.....	....	21.18	206	20.75	134	.....	.....

Monthly Discharge of Black River near Washago for 1916-7

Drainage Area, 585 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)..	835	42	282	1.43	.07	.48	.55
November " ..	950	545	715	1.62	.93	1.22	1.36
December " ..	1,840	1.110	1,546	3.15	1.90	2.64	3.04
January .. (1917)	1,140	330	479	1.95	.56	.82	.95
February	345	196	247	.59	.34	.42	.44
March	3,960	198	867	6.77	.34	1.48	1.71
April	4,350	1,550	2,961	7.44	2.65	5.06	5.64
May	1,730	915	1,305	2.96	1.56	2.23	2.57
June.....	1,290	333	627	2.21	.57	1.07	1.19
July	885	206	488	1.51	.35	.83	.96
August	459	134	253	.79	.23	.43	.50
September	128	67	96	.22	.11	.16	.18
The year.....	4,350	42	824	7.44	.07	1.41	19.12

Bonnechere River at Renfrew

Location—One-half mile below Raglan St., Town of Renfrew, Township of Horton, County of Renfrew, on the Barnett Estate.

Records Available—Discharge measurements from September, 1916. Daily gauge readings from November 1, 1916.

Drainage Area—910 square miles.

Gauge—On the right bank of the river at the section, a box chain gauge with nine feet of standard gauge plates. Distance from end of weight to marker is 12.43 feet.

Channel and Control—The channel is straight for 100 feet above and 300 feet below the station, but both above and below the station long sharp curves occur. There is a high clay bank on the right, and a low clay bank on the left. At extreme high water there may be an escape from this channel of some water from higher above the section to points below the section. The bed of the stream is composed of clean small stones.

Winter Flow—Little ice effect expected, though on occasions frazil ice from the rapids above may make meter measurements difficult.

Regulation—The Round Lake Dam, the Golden Lake Dam for power purposes, and the dams on the upper river for lumbering purposes have large regulating effects on this river. The power plants in Renfrew, running twenty-four hours to their full capacity, and having little pondage, will not seriously affect the estimate of mean gauge heights.

Observer—R. Dalton, Renfrew.

Discharge Measurements of Bonnechere River at Renfrew in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 26....	McLennan, C. C.	81	134	1.90	102.81	254	.....
Nov. 15....	Campbell, L.L..	142	123	1.82	102.58	223	.....
Dec. 12....	" ..	147	138	1.83	102.71	252	.....
1917							
Jan. 20....	" ..	130	255	1.62	103.48	435(a)	.....
Feb. 21....	" ..	130	168	1.64	103.07	277(b)	.....
" 21....	" ..	130	229	1.73	103.34	396(b)	.....
Mar. 15....	" ..	140	166	2.33	102.93	387 (c)	.....
" 22....	" ..	147	208	2.31	103.32	479(c)	.....
April 20....	" ..	121	757	2.96	104.33	2,242(d)	.....
May 10....	Hatton	121	722	2.62	104.08	1,889(d)	.....
July 8....	"	136	271	3.08	103.42	833	.....
" 16....	Ronald, F.....	125	212	2.10	102.96	466	.....
Aug. 9....	"	121	159	1.70	102.75	270	.....
Sept. 11....	"	120	177	1.57	102.75	279	.....
Oct. 15....	Hatton, M	121	186	1.74	102.89	324	.....

(a) Ice effect.
(b) Ice measurement.
(c) Some ice at edge of section.
(d) Reading taken at high-water section 1,500 feet below gauge.

Daily Gauge Height and Discharge of Bonnechere River at Renfrew for 1916-7

Drainage Area, 910 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	102.54	209	102.29	161	102.62	230	102.40	162	103.00	290	103.42	496	104.50	2510	104.13	1940	103.48	935	103.15	520	102.73	263	102.64	235
2	102.41	182	102.50	200	102.54	210	102.58	196	103.50	670	103.50	560	104.38	2310	104.15	1970	103.48	935	103.08	464	102.71	256	102.73	263
3	102.54	209	102.50	200	102.35	171	102.56	192	103.58	780	103.50	560	104.60	2660	104.17	2000	103.17	535	103.08	464	102.71	256	102.56	214
4	102.41	182	102.33	167	102.60	224	102.67	217	102.71	202	103.25	370	104.40	2350	104.17	2000	103.27	635	103.08	464	102.67	244	102.83	305
5	102.27	159	102.12	142	102.65	238	102.73	232	103.69	960	103.40	480	104.42	2380	104.15	1970	103.25	615	103.08	464	102.71	256	102.79	286
6	102.41	182	102.42	184	102.77	279	102.75	238	103.35	520	103.42	496	104.31	2220	104.13	1940	103.25	615	103.10	480	102.73	263	102.71	256
7	102.54	209	102.42	184	102.73	263	102.65	212	103.19	394	103.40	480	104.08	1850	104.10	1890	103.25	615	103.06	448	102.73	263	102.75	271
8	102.54	209	102.62	230	102.71	256	102.96	320	103.00	290	103.15	315	104.25	2120	104.10	1890	.....	665	102.98	388	102.73	263	102.69	249
9	102.65	237	102.58	219	102.62	230	102.83	263	103.42	580	103.08	282	104.15	1970	104.08	1850	103.33	715	102.98	388	102.75	271	102.42	184
10	102.54	209	102.54	210	102.56	214	103.00	340	103.48	650	103.02	260	104.02	1770	104.08	1850	103.32	715	102.83	305	102.73	263	102.75	271
11	102.41	182	102.50	200	102.73	263	103.06	376	102.98	282	103.00	252	104.15	1970	104.08	1850	103.33	715	102.75	271	102.67	244	102.75	271
12	102.54	209	102.52	205	102.69	249	103.17	456	103.65	900	103.08	282	104.08	1850	104.02	1770	103.25	615	102.90	340	102.54	210	102.77	279
13	102.41	182	102.54	210	102.67	217	103.42	700	103.60	825	103.15	370	104.08	1850	103.98	1700	103.33	715	102.90	340	102.73	263	102.75	271
14	102.65	237	102.62	230	102.60	200	103.00	340	103.42	580	103.08	330	104.08	1850	103.90	1590	103.33	715	102.92	352	102.73	263	102.75	271
15	102.65	237	102.58	219	102.60	200	103.46	760	103.50	670	102.99	335	104.04	1800	103.83	1480	103.25	615	102.92	352	102.71	256	102.67	244
16	102.74	268	102.56	214	102.60	200	103.35	615	103.46	625	103.00	340	104.10	1890	103.77	1390	103.17	535	103.02	416	102.67	244	102.71	256
17	102.54	209	102.58	219	102.90	290	103.29	472	103.25	440	103.67	1240	104.10	1890	103.77	1390	103.25	615	102.94	364	102.69	249	103.08	464
18	102.65	237	102.60	224	102.85	271	102.94	267	102.96	275	103.50	975	104.10	1890	103.73	1330	103.31	685	102.96	376	102.67	244	103.06	448
19	102.74	268	102.21	151	102.73	232	103.50	670	103.40	560	103.02	416	104.23	2090	103.73	1330	103.31	685	102.94	364	102.50	200	103.06	448
20	102.74	268	102.58	219	103.02	352	103.48	650	103.40	560	103.08	464	104.31	2220	103.71	1300	103.31	685	102.92	352	102.71	256	103.00	400
21	102.74	268	102.62	230	102.73	232	102.96	275	103.35	440	103.00	400	104.38	2310	103.69	1270	103.33	715	102.93	358	102.81	295	102.92	352
22	102.54	209	102.62	230	102.73	232	103.31	488	103.38	464	102.94	364	104.33	2250	103.60	1130	103.31	685	102.79	286	102.71	256	102.83	305
23	102.65	237	102.58	219	103.10	400	102.94	267	103.33	424	102.92	352	104.31	2220	103.65	1200	103.31	685	102.64	235	102.64	235	102.67	244
24	102.54	209	102.60	224	102.85	271	102.81	227	103.17	325	103.54	1040	104.23	2090	103.67	1240	103.17	535	102.79	286	102.75	271	102.86	320
25	102.65	237	102.52	205	102.67	217	102.63	186	102.92	230	103.46	915	104.06	1830	103.73	1330	103.08	464	102.75	271	102.73	263	102.83	305
26	102.54	209	102.42	184	102.90	290	102.94	267	103.50	560	104.98	3230	104.17	2000	103.75	1360	103.08	464	102.71	256	102.56	214	102.83	305
27	102.54	209	102.60	224	102.77	244	103.00	290	103.42	496	108.52	8660	104.17	2000	103·65	1200	103.04	432	102.71	256	102.73	263	102.83	305
28	102.54	209	102.56	214	102.69	222	102.38	148	103.40	480	108.60	8780	104.15	1970	103.65	1200	103.15	520	102.67	244	102.67	244	102.85	315
29	102.54	209	102.58	219	102.71	227	102.96	275	.....	....	104.75	2890	104.15	1970	103.58	1090	103.10	480	102.50	200	102.60	224	102.79	286
30	102.54	209	102.58	219	102.73	232	102.92	260	.....	....	104.25	2120	104.13	1940	103.54	1040	103.19	550	102.67	244	102.73	263	102.71	256
31	102.65	237	.....	....	102.33	154	103.02	300	.....	....	104.19	2030	.....	....	103.50	975	.....	....	102.71	256	102.73	263	.....	....

Monthly Discharge of Bonnechere River at Renfrew for 1916-7

Drainage Area, 910 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	268	159	217	.29	.17	.24	.28
November "	230	142	205	.25	.16	.23	.26
December "	400	154	242	.44	.17	.27	.31
January (1917)	760	148	344	.84	.16	.38	.44
February	960	202	519	1.05	.22	.57	.59
March	8,780	252	1,293	9.65	.28	1.42	1.64
April	2,660	1,770	2,067	2.92	1.95	2.27	2.53
May	2,000	975	1,531	2.20	1.07	1.68	1.94
June	935	432	636	1.03	.47	.70	.78
July	520	200	349	.57	.22	.38	.44
August	295	200	252	.32	.22	.28	.32
September	464	184	296	.51	.20	.33	.37
The year	8,780	142	662	9.65	.16	.73	9.87

Madawaska River at Claybank

Location—Near lot 7, concession 9, Township of McNab, County of Renfrew, half mile below Flat Rapids.

Records Available—High-water measurements during 1915 and 1916 to be used in conjunction with low-water measurements at this section for application to gauge readings taken at Claybank by the Ottawa River Storage Survey, from April 15, 1909. Discharge measurements commenced in October, 1916, at this section, and September, 1915, at high-water section.

Drainage Area—3,210 square miles.

Gauge—Nine feet of standard gauge plates on pier of Claybank bridge 500 feet below high-water section.

Channel and Control—Channel is straight for 3,000 feet above and 500 feet below the station and favorably fast current exists for metering purposes. Clay and gravel banks, high on the right bank, medium, to low on the left bank, but the river is not liable to overflow. The flow is through one channel at high and low stages and through two channels at medium stages. Possibly frazil ice may be expected on some days.

Discharge Measurements—From boat and ice.

Winter Flow—Gauge height discharge relation will be considerably affected by ice, but likely to be capable of close estimation from discharge measurements.

Regulation—There are no powers developed on the river as yet, though construction has started on one at the foot of Calabogie Lake, which will have considerable regulating effect on the river below, but possibly not acting rapidly enough to disturb the gauge height discharge daily estimate. The storage works for lumbering purposes on the upper river and its tributaries are still in use.

Observer—Mrs. Ed. Jandreau, R. R. Arnprior.

Discharge Measurements of Madawaska River at Claybank in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 12....	Campbell, L. L..	230	2,085	.56	260.27	1,176	.....
1917							
Feb. 26....	" ...	300	4,307	.49	261.13	2,123(a)	.....
Apr. 30....	Hatton	370	6,218	1.82	264.97	11,259(b)	.....
" 30....	"	349	6,256	1.81	264.97	11,307	.....
May 28....	Campbell, L. L...	333	5,334	1.22	262.27	5,452	.....
June 18....	Hatton	329	5,200	.91	261.85	4,753	.....
July 17....	Ronald, F	329	4,726	.53	260.98	2,485	.....
Sept. 10....	"	293	1,824	.39	259.85	708(c)	.....
Oct. 18....	"	224	1,708	.17	259.44	284(c)	.....

(a) Ice measurement.
(b) Reading taken 100 feet below regular section.
(c) Readings taken at low water section.

Daily Gauge Height and Discharge of Madawaska River at Claybank, for 1916-7

Drainage Area, 3,210 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	260.12	1050	260.54	1780	260.79	.....	261.36	....	261.04	.....	261.04	.....	264.44	10320	264.55	10560	262.21	5410	261.19	3170	260.83	2380	259.98	855
2	260.12	1050	260.54	1780	260.77	.....	261.36	....	261.04	.....	261.04	.....	264.60	10670	264.50	10450	262.19	5370	261.19	3170	260.79	2290	259.98	855
3	260.12	1050	260.54	1780	260.79	.....	261.36	....	261.04	.....	261.04	.....	264.85	11220	264.41	10250	262.31	5630	261.15	3080	260.69	2080	259.98	855
4	260.21	1180	260.54	1780	260.83	.....	261.33	....	261.02	.....	261.09	.....	264.94	11420	264.31	10030	262.23	5460	261.15	3080	260.64	1980	259.89	740
5	260.21	1180	260.54	1780	260.86	.....	261.27	....	261.02	.....	261.13	.....	264.69	10870	264.20	9790	262.19	5370	261.10	2970	260.60	1900	259.89	740
6	260.21	1180	260.54	1780	260.92	.....	261.27	....	261.11	.....	261.13	.....	264.60	10670	263.98	9310	262.19	5370	261.06	2880	260.60	1900	259.85	695
7	260.21	1180	260.54	1780	260.86	.....	261.29	....	261.11	.....	261.13	.....	264.69	10870	263.92	9170	262.10	5170	261.06	2880	260.56	1820	259.85	695
8	260.12	1050	260.54	1780	260.83	.....	261.29	....	261.04	.....	261.11	.....	264.60	10670	263.82	8950	262.10	5170	261.02	2790	260.56	1820	259.85	695
9	260.12	1050	260.54	1780	260.92	.....	261.34	....	261.04	.....	261.11	.....	264.52	10490	263.71	8710	261.98	4910	260.98	2710	260.56	1820	259.85	695
10	260.12	1050	260.54	1780	260.94	.....	261.34	....	260.96	.....	261.06	.....	264.44	10320	263.62	8510	262.10	5170	260.98	2710	260.52	1740	259.85	695
11	260.12	1050	260.54	1780	261.02	.....	261.38	....	260.96	.....	261.09	.....	264.35	10120	263.54	8340	262.14	5260	260.98	2710	260.52	1740	259.85	695
12	260.12	1050	260.54	1780	261.13	.....	261.38	....	261.00	.....	261.13	.....	264.27	9940	263.40	8030	262.14	5260	260.94	2620	260.48	1660	259.85	695
13	260.12	1050	260.54	1780	261.21	.....	261.38	....	261.00	.....	261.13	.....	264.19	9770	263.40	8030	262.06	5080	260.95	2640	260.27	1280	259.79	630
14	259.96	830	260.69	2080	261.23	.....	261.38	....	261.04	.....	261.13	.....	264.02	9390	263.29	7790	262.06	5080	260.85	2420	260.23	1220	259.69	520
15	259.96	830	260.69	2080	261.29	.....	261.38	....	261.04	.....	261.09	.....	263.94	9220	263.19	7570	261.98	4910	260.85	2420	260.23	1220	259.69	520
16	259.96	830	260.69	2080	261.29	.....	261.38	....	261.09	.....	261.09	.....	263.85	9020	263.05	7260	261.94	4820	260.85	2420	260.19	1160	259.69	520
17	259.96	830	260.69	2080	261.38	.....	261.36	....	261.04	.....	261.02	.....	263.77	8840	262.89	6910	261.89	4710	260.89	2510	260.19	1160	259.69	520
18	259.96	830	260.69	2080	261.38	.....	261.29	....	261.00	.....	261.02	.....	263.77	8840	262.78	6670	261.85	4620	260.94	2620	260.19	1160	259.65	480
19	259.96	830	260.69	2080	261.38	.....	261.21	....	261.04	.....	261.00	.....	263.98	9310	262.56	6180	261.62	4110	260.89	2510	260.31	1340	259.65	480
20	259.96	830	260.69	2080	261.29	.....	261.21	....	261.04	.....	261.00	.....	264.19	9770	262.56	6180	261.56	3980	260.94	2620	260.19	1160	259.60	430
21	260.04	935	260.69	2080	261.38	.....	261.21	....	261.11	.....	260.96	.....	264.19	9770	262.51	6070	261.56	3980	261.02	2790	260.15	1100	259.60	430
22	260.12	1050	260.69	2080	261.38	.....	260.96	....	261.04	.....	260.94	.....	264.60	10670	262.42	5870	261.52	3890	260.98	2710	260.10	1020	259.65	480
23	260.21	1180	260.71	2120	261.42	.....	260.96	....	261.04	.....	261.00	.....	264.85	11220	262.37	5760	261.52	3890	260.94	2620	260.15	1100	259.65	480
24	260.29	1300	260.75	2200	261.42	.....	261.21	....	261.06	.....	261.02	.....	264.94	11420	262.27	5540	261.48	3810	260.94	2620	260.15	1100	259.58	414
25	260.38	1460	260.83	2380	261.33	.....	261.21	....	261.09	.....	260.94	.....	264.85	11220	262.31	5630	261.39	3610	260.98	2710	260.10	1020	259.58	414
26	260.46	1620	260.83	2380	261.33	.....	261.04	....	261.13	.....	261.04	.....	264.77	11040	262.31	5630	261.35	3520	260.98	2710	260.10	1020	259.52	366
27	260.54	1780	260.83	2380	261.38	.....	261.04	....	261.09	.....	261.13	.....	264.69	10870	262.31	5630	261.31	3430	260.94	2620	260.10	1020	259.52	366
28	260.54	1780	260.83	2380	261.38	.....	261.13	....	261.09	.....	262.27	.....	264.65	10780	262.27	5540	261.27	3340	260.94	2620	260.10	1020	259.48	334
29	260.54	1780	260.86	2440	261.44	.....	261.13	....	.....	.....	262.94	.....	.....	.....	10670	262.23	5460	261.27	3340	260.94	2620	260.02	910	259.52	366
30	260.54	1780	260.88	2490	261.36	.....	261.13	....	.....	.....	263.77	.....	.....	.....	10670	262.22	5430	261.23	3260	260.89	2510	259.98	855	259.56	398
31	260.54	1780	.....	.....	261.36	.....	261.13	....	.....	.....	264.31	.....	.....	.....	.....	262.23	5460	.....	.....	260.89	2510	259.98	855	.....	.....

NOTE.—As there was only one measurement obtained no attempt has been made to estimate the winter flow (Dec., Jan., Feb., March).

Monthly Discharge of Madawaska River at Claybank for 1916-7

Drainage Area, 3,210 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October ...(1916)	1,780	830	1,175	.55	.26	.37	.43
November. "	2,490	1,780	2,021	.78	.55	.63	.70
December "	.....	.....	.....	.....	.....	.....	.....
January ..(1917)	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	11,420	8,840	10,336	3.56	2.75	3.22	3.59
May	10,560	5,430	7,442	3.29	1.69	2.32	2.67
June	5,630	3,260	4,564	1.75	1.02	1.42	1.58
July	3,170	2,420	2,709	.99	.75	.84	.97
August	2,380	855	1,415	.74	.27	.44	.51
September	855	334	569	.27	.10	.18	.20
The year	11,420	334	3,769	3.56	.55	1.17	10.65

Madawaska River at Madawaska

Location—50 feet above the G.T. Ry. bridge, Canada Atlantic branch, 500 yards east of the Madawaska Station, Township of Murchison, District of Nipissing.

Records Available—Discharge measurements from September, 1915, and monthly thereafter, and gauge readings from September 27, 1915.

Drainage Area—800 square miles.

Gauge—Three feet of standard gauge plates secured vertically to pile, three feet west of face of east abutment.

Channel and Control—Channel is straight for about 400 feet above the section, curving slightly to the right under the bridge. The banks are sandy, and not liable to overflow. The bed of the river is soft, and there are some weeds above the section. The point of control is not clearly defined.

Discharge Measurements—Made about fifty feet above gauge from a boat.

Winter Flow—Affected by ice conditions.

Regulation—Lumber interests on the river above the section operate dams for driving purposes.

Accuracy—Open water rating curve for ordinary stages changing slightly.

Observer—G. Wormke, Madawaska.

Discharge Measurements of Madawaska River at Madawaska in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 27....	Campbell, L. L. .	79	498	.54	102.25	267	.....
Dec. 13....	" ..	96	779	.74	105.46	579 (a)	.....
1917							
Jan. 30....	" ..	84	496	.83	103.25	410 (b)	.....
Feb. 23....	Hatton	75	410	.52	102.58	212 (b)	.....
Mar. 9....	"	75	402	.54	102.50	216 (b)	.....
Apr. 17....	Campbell, L. L. .	111	1,062	1.67	106.50	1,774	.....
June 22....	Hatton	87	711	1.11	104.19	786	.....
July 28....	"	85	638	1.06	103.71	677	.....
Aug. 22....	Ronald, F.....	82	456	.64	101.87	293	.....
Sept. 27....	Hatton, M	74	472	.35	101.08	169	.....
Oct. 26....	Ronald, F.....	78	513	.65	102.08	336	.....

(a) Some ice at gauge.
(b) Ice measurement.

Daily Gauge Height and Discharge of Madawaska River at Madawaska, for 1916-7.

Drainage Area, 800 Square Miles.

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	101.46	207	102.33	336	103.40	440	104.54	394	103.19	260	102.58	213	106.08	1350	109.08	2500	105.54	1170	103.46	610	103.52	625	101.50	236
2	101.42	202	102.33	336	103.31	426	104.38	394	103.17	276	102.58	213	106.58	1530	109.00	2470	105.33	1100	103.43	600	103.44	605	101.44	226
3	101.35	192	102.33	336	103.29	426	104.15	340	103.13	272	102.52	217	108.88	2420	108.88	2420	105.17	1060	103.35	585	103.29	570	101,42	223
4	101.27	181	102.33	336	103,25	418	104.04	325	103.08	287	102.50	224	108.92	2440	108.75	2370	105.00	1010	103.33	580	103.19	550	101.42	223
5	101.25	178	102.29	330	103.33	426	104.00	317	103.08	287	102.48	223	108.63	2320	108.42	2240	105.00	1010	103.40	595	102.92	494	101.42	223
6	101.23	175	102.29	330	103.75	498	104.00	317	103.08	287	102.46	213	108.13	2130	108.08	2110	105.17	1060	103.48	615	102.81	472	101.40	220
7	101.17	167	102.25	324	103.77	500	104.00	317	103,00	272	102.50	217	107.71	1960	107.83	2010	105.17	1060	103.48	615	102.73	456	101.42	223
8	101.17	167	102.29	330	103.83	490	104.00	317	103.00	272	102.50	217	107.42	1850	107.54	1900	105.38	1120	103.56	635	102.56	422	101.37	215
9	101 17	167	102.46	356	104.67	610	103.90	302	103.00	287	102.50	220	107.25	1780	107.50	1880	105.46	1150	103.65	655	102.50	410	101.35	212
10	101.17	167	103.12	461	104.71	600	103.83	287	103.00	287	102.48	216	107.04	1710	107.33	1810	105.37	1120	103.67	660	102.52	414	101.33	209
11	101.17	167	103.54	530	104.67	585	103.73	276	103.00	287	102.50	217	107.00	1690	107.04	1710	105.21	1070	103.58	640	102.35	383	101.33	209
12	101.15	164	103.35	458	104.67	540	103.56	250	103.00	287	102.48	216	107.00	1690	106.67	1560	105.08	1030	103.58	640	102.23	361	101,27	200
13	101.19	170	103.29	442	105.54	575	103.50	250	102.92	275	102.58	227	107.00	1690	106.46	1490	104.87	970	103.58	640	101,96	312	101.25	197
14	101.25	178	103.04	410	106.08	640	103.50	242	102.79	257	102.83	272	106.71	1570	106.15	1380	104.79	945	103.71	670	101.92	305	101.25	197
15	101.25	178	102.88	378	106.29	650	103.50	242	102.67	235	102.82	272	106.67	1560	105.08	1030	104.77	940	103.79	690	101.92	305	101.25	197
16	101.25	178	102.83	362	106.29	650	103.50	242	102.60	227	102.83	272	106.63	1550	104.50	865	104.54	875	103.83	695	101.92	305	101.25	197
17	101.58	224	102.83	362	106.17	670	103.50	242	102.58	227	102.83	272	106.58	1530	104.46	855	104.50	865	103.83	695	101.92	305	101.25	197
18	101.69	240	102.73	353	106.00	650	103.46	227	102.56	220	102.83	272	107.17	1750	104.60	895	104.44	850	104.33	820	101.92	305	101.21	191
19	101.67	238	102.65	338	106.00	650	103.35	213	102.50	213	102.77	272	107.54	1900	104.65	910	104.31	815	104.33	820	101.92	305	101.21	191
20	102.17	313	102.56	322	105.83	610	103.31	213	102.52	213	102.75	275	108.46	2250	104.79	945	104.30	810	104.40	840	101.92	305	101.21	191
21	102.54	368	102.46	310	105.56	575	103.25	199	102.58	213	102.75	276	109,50	2660	104.75	935	104.23	795	104.19	785	101.92	305	101.19	189
22	102.69	392	102.75	326	105.58	540	103,27	199	102.56	213	102.73	287	110.04	2880	104.79	945	104.22	790	104.23	795	101.88	299	101.17	186
23	102.35	339	102.35	269	105.25	505	103.33	213	102.58	213	102.75	302	110.29	2980	104.42	845	104.13	770	104.13	770	101.83	290	101.17	186
24	102.27	328	102.42	272	105.25	505	103.33	213	102.54	209	102.88	332	110.08	2890	106.08	1350	104.00	740	104.25	800	101.79	283	101.17	186
25	102.17	313	102.62	332	105.38	540	103.33	213	102.50	206	103.21	410	110.08	2890	106.29	1430	103.88	710	104.13	770	101.65	260	101.17	186
26	102.23	321	104.62	650	105.27	515	103.33	212	102.56	213	103.67	555	110.25	2960	106.17	1380	103.71	670	104.08	755	101.54	242	101.10	176
27	102.24	323	104.50	630	105.17	490	103.27	227	102.58	213	104.67	735	110.21	2940	106.04	1340	103.56	635	103.88	710	101.50	236	101.08	174
28	102.25	324	103.92	525	105 08	474	103.25	227	102.58	213	106.82	1220	110.00	2860	105.96	1310	103.42	600	103.73	675	101.50	236	101.08	174
29	102.25	324	103.58	469	104.79	426	103.25	227	.....	....	107.04	1280	109.67	2730	105.88	1290	103.38	590	103.60	640	101.50	236	101.21	191
30	102.17	313	103.58	469	104.67	410	103.25	227	.....	....	106.21	1070	109.92	2830	105.79	1250	103.44	605	103.56	635	101.50	236	101.29	203
31	102.17	313	.....	....	104.67	410	103.25	257	.....	....	106.08	1030	.....	....	105.58	1180	.....	.....	103.50	620	101.50	236	.....	.....

Monthly Discharge of Madawaska River at Madawaska for 1916-7

Drainage Area, 800 Square Miles

Month.	Discharge in Second-feet			Discharge in Second-feet per square mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	392	164	242	.49	.20	.30	.35
November "	650	269	389	.81	.34	.49	.55
December "	670	410	530	.84	.51	.66	.76
January .. (1917)	394	199	262	.49	.25	.33	.38
February	287	206	247	.36	.26	.31	.32
March	1,280	213	395	1.60	.27	.49	.56
April	2.980	1.350	2,176	3.72	1.69	2.72	3.03
May	2,500	845	1,503	3.12	1.06	1.88	2.17
June	1,170	590	894	1.46	.74	1.12	1.25
July	840	580	686	1.05	.72	.88	1.01
August	625	236	357	.78	.29	.44	.51
September	236	174	201	.29	.22	.25	.28
The year	2,980	164	658	3.72	.20	.82	11.16

Maganetawan River (North Branch) near Burk's Falls

Location—One mile north of Burk's Falls station, 200 feet upstream from the Grand Trunk Railway bridge, on lot 7, concession 10, Township of Armour, District of Parry Sound.

Records Available—Monthly discharge measurements from June, 1915. Daily gauge readings from August 1, 1915.

Drainage Area—107 square miles.

Gauge—Vertical steel staff with enamelled face fastened to a 2 x 4 scantling and connected to a wooden platform on the right shore about 250 feet above G.T.R. bridge. Zero of the gauge (elev. 27.23 feet) is referred to a bench mark (elev. 35.00 feet) painted on top of 5-ft. iron pipe 20 feet above gauging station.

Channel and Control—Straight for about 200 feet above and 100 feet below the gauging station to the falls. The banks are high and wooded, and are not liable to overflow. The bed of the stream is composed of clay and a few rocks, practically permanent. The velocity is moderate.

Discharge Measurements—Made by wading with a small Price current meter, in high water just above gauge, in low water 150 feet below gauge.

Winter Flow—Open water conditions.

Accuracy—The rating curve is fairly well defined for lower gauge readings.

Observer—Henry Stroud, Burk's Falls.

Discharge Measurements of Maganetawan River (North Branch) near Burk's Falls in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 11	Murray, W. S. ..	38	72	1.09	29.42	78	.....
1917							
Jan. 16	"	91	350	.25	29.63	88 (a)	.....
Feb. 14	"	40	69	1.22	29.71	83 (a)	.....
Mar. 20	"	63	87	.78	29.30	68 (b)	.....
Apl. 11	"	93	609	1.19	31.75	723	.....
May 9	"	94	548	.76	31.20	416	.....
June 21	Campbell, L. L..	86	474	.42	30.26	200	.....
July 23	Ronald, F	100	508	.74	31.01	308	.....
Aug. 26	"	36	68	1.52	29.44	103	.....
Sept. 24	"	35	48	.85	29.23	42	.....
Oct. 30	"	54	84	1.97	30.23	166	.....

(a) Ice measurement taken 150 feet above regular section.
(b) Ice measurement taken 20 feet above regular section.

Daily Gauge Height and Discharge of Maganetawan River (North Branch) near Burk's Falls for 1916-7

Drainage Area, 107 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	29.46	82	31.21	404	30.75	294	29.96	140	29.67	93	29.46	66	31.50	482	32.25	725	30.59	261	30.21	185	30.40	221	29.60	83
2	29.42	77	31.09	374	30.75	294	29.92	133	29.67	93	29.46	66	31.67	530	32.17	695	30.55	252	30.17	178	30.23	188	29.60	83
3	29.42	77	31.00	352	30.84	314	29.88	127	29.71	99	29.42	62	31.84	585	32.09	670	30.51	244	30.17	178	30.15	174	29.56	78
4	29.42	77	30.92	333	31.09	374	29.84	120	29.67	93	29.42	62	31.92	610	32.00	640	30.47	236	30.09	163	30.06	158	29.23	45
5	29.38	72	30.84	314	31.34	437	29.80	113	29.62	86	29.42	62	32.09	670	31.92	610	30.42	225	30.09	163	29.98	144	29.06	35
6	29.25	57	30.75	294	31.46	470	29.80	113	29.71	99	29.44	64	32.30	745	31.75	555	30.42	225	30.17	178	29.90	130	28.90	28
7	29.17	51	30.71	286	31.59	510	29.71	99	29.71	99	29.46	66	32.38	775	31.59	510	30.42	225	30.67	278	29.81	115	28.65	23
8	29.17	51	30.67	278	31.71	545	29.71	99	29.73	102	29.46	66	32.15	690	31.34	437	30.47	236	30.76	297	29.73	102	28.48	20
9	29.21	54	30.67	278	31.80	575	29.75	105	29.71	99	29.46	66	32.09	670	31.25	414	30.47	236	30.84	314	29.69	96	28.40	18
10	29.34	67	30.67	278	31.84	585	29.75	105	29.67	93	29.46	66	32.00	640	31.21	404	30.42	225	30.92	333	29.65	90	28.40	18
11	29.44	79	30.67	278	31.84	585	29.71	99	29.67	93	29.46	66	31.84	585	31.09	374	30.38	217	31.01	354	29.65	90	28.48	20
12	29.44	79	30.67	278	31.84	585	29.67	93	29.71	99	29.44	64	31.67	530	31.00	352	30.34	209	31.92	610	29.56	78	28.48	20
13	29.44	79	30.67	278	31.88	600	29.63	87	29.75	105	29.44	64	31.59	510	30.92	333	30.38	217	32.01	640	29.52	73	28.48	20
14	29.44	79	30.67	278	31.92	610	29.63	87	29.75	105	29.42	62	31.42	459	30.80	305	30.42	225	32.01	640	29.48	68	28.48	20
15	29.46	82	30.67	278	31.96	625	29.67	93	29.75	105	29.38	58	31.34	437	30.67	278	30.42	225	32.09	670	29.54	75	28.52	20
16	29.50	87	30.67	278	32.00	640	29.67	93	29.71	99	29.34	54	31.25	414	30.63	269	30.38	217	31.92	610	29.40	60	29.40	60
17	29.50	87	30.67	278	32.00	640	29.67	93	29.67	93	29.30	50	31.25	414	30.50	242	30.34	209	31.76	560	29.40	60	29.40	60
18	29.59	100	30.67	278	31.92	610	29.65	90	29.67	93	29.30	50	31.34	437	30.42	225	30.34	209	31.67	530	28.40	18	29.40	60
19	29.75	124	30.67	278	31.00	352	29.67	93	29.67	93	29.34	54	31.42	459	30.38	217	30.30	201	31.59	510	28.23	15	29.40	60
20	29.92	158	30.67	278	30.84	314	29.67	93	29.63	87	29.34	54	31.59	510	30.38	217	30.30	201	31.42	459	28.23	15	29.36	56
21	30.67	370	30.63	269	30.75	294	29.67	93	29.59	82	29.38	58	32.75	920	30.38	217	30.26	194	31.26	417	28.23	15	29.36	56
22	30.75	392	30.63	269	30.71	286	29.71	99	29.59	82	29.38	58	33.92	1390	30.38	217	30.26	194	31.17	394	28.15	13	29.36	56
23	30.80	407	30.59	261	30.67	278	29.71	99	29.55	76	29.42	62	34.00	1420	30.42	225	30.17	178	31.09	374	28.06	11	29.15	40
24	31.09	492	30.50	242	30.59	261	29.67	93	29.55	76	29.42	62	34.17	1490	30.50	242	30.17	178	30.97	345	27.73	5	29.15	40
25	31.09	492	30.42	225	30.50	242	29.67	93	29.55	76	29.42	62	33.84	1360	30.59	261	30.09	163	30.84	314	29.23	45	29.15	40
26	31.17	515	30.34	209	30.34	209	29.67	93	29.51	71	29.46	66	33.42	1190	30.67	278	30.21	185	30.76	297	29.44	64	29.15	40
27	31.21	530	30.42	225	30.25	192	29.67	93	29.50	70	30.92	333	33.00	1020	30.75	294	30.17	178	30.67	278	29.48	68	29.15	40
28	31.25	540	30.50	242	30.21	185	29.67	93	29.46	66	30.34	209	32.75	920	30.75	294	30.09	163	30.59	261	29.52	73	29.15	40
29	31.25	540	30.59	261	30.17	178	29.67	93	.....	.....	30.55	252	32.50	820	30.75	294	30.17	178	30.51	244	29.56	78	29.19	42
30	31.25	540	30.75	294	30.09	163	29.67	93	.....	.....	30.75	294	32.34	760	30.75	278	30.26	194	30.42	225	29.56	78	29.10	37
1	31.25	540	.....	.....	30.00	147	29.67	93	.....	.....	31.50	482	.....	.....	30.69	282	.....	.....	30.34	209	29.60	83	.....	.....

Monthly Discharge of Maganetawan River (North Branch) near Burk's Falls for 1916-7

Drainage Area, 107 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October...(1916)	540	51	225	5.05	.48	2.10	2.42
November "	404	209	282	3.78	1.95	2.64	2.95
December "	640	147	400	5.98	1.37	3.74	4.31
January ..(1917)	140	87	100	1.31	.81	.93	1.07
February	105	66	90	.98	.62	.84	.87
March	482	50	102	4.50	.47	.95	1.10
April.....	1,490	414	748	13.92	3.87	6.99	7.80
May.....	725	217	366	6.78	2.03	3.42	3.94
June	261	163	210	2.44	1.52	1.96	2.19
July.....	670	163	362	6.26	1.52	3.38	3.90
August	221	5	81	2.07	.05	.76	.88
September	83	18	42	.78	.17	.39	.44
The year	1,490	5	251	13.92	.05	2.35	31.84

Maganetawan River (South Branch) near Burk's Falls

Location—One-half mile south of Burk's Falls station, and 200 feet east of G.T. Ry. tracks on lot 8, concession 8, Township of Armour, Parry Sound District.

Records Available—Discharge measurements from June, 1915. Daily gauge heights from August 1, 1915.

Drainage Area—257 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, fastened to 2 x 8 scantling wedged between two hardwood trees on the left shore 20 feet above gauging station. Zero of the gauge (elev. 22.00 feet) is referred to a bench mark (elev. 35.00 feet) painted on top of a 5-ft. iron pipe located near the gauge on the north branch of the river.

Channel and Control—Straight for about 250 feet above and 500 feet below the rapids. The banks are high and wooded, and are not liable to overflow. The current is moderate.

Discharge Measurements—Made by wading with a small Price meter and from G.T.R. bridge below gauge.

Winter Flow—Open water conditions.

Regulation—Temporary dams above, which are used during log driving season, cause fluctuations at the gauge.

Accuracy—Rating curve only fairly well defined.

Observer—Henry Stroud, Burk's Falls.

Discharge Measurements of Maganetawan River (South Branch) near Burk's Falls in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 11....	Murray, W. S ...	64	88	1.71	23.49	151	.....
1917							
Feb. 14....	"	65	155	1.77	24.00	275 (a)	.....
April 11....	"	79	541	1.80	25.91	979 (b)	.....
May 9....	"	85	571	1.95	26.08	1,116 (b)	.....
June 21....	Campbell, L. L..	84	518	1.23	25.17	637 (b)	.....
July 23....	Ronald, F	85	400	1.06	24.17	425 (b)	.....
Aug. 26....	"	77	495	.52	24.12	259	.....
Sept. 24	"	68	82	1.67	23.58	137	.....

(a) Ice measurement taken 100 feet above regular section.
(b) Measurement taken half mile below regular section.

Daily Gauge Height and Discharge of Maganetawan River (South Branch) near Burk's Falls for 1916-7

Drainage Area, 257 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	23.66	229	25.12	630	24.83	515	24.71	473	24.00	248	23.87	213	24.75	487	26.66	1460	24.62	441	24.75	487	24.83	515	24.13	285
2	23.62	216	25.16	645	24.91	545	24.71	473	24.08	270	23.87	213	24.91	545	26.66	1460	24.62	441	24.75	487	24.75	487	24.08	270
3	23.60	209	25.16	645	25.00	580	24.62	441	24.25	320	23.83	203	25.08	615	26.62	1440	24.58	427	24.75	487	24.67	458	24.04	259
4	23.58	202	25.12	630	25.12	630	24.58	427	24.25	320	23.83	203	25.25	680	26.50	1360	24.58	427	24.71	473	24.58	427	24.00	248
5	23.58	202	25.08	615	25.21	665	24.58	427	24.25	320	23.83	203	25.41	750	26.41	1300	24.58	427	24.67	458	24.50	400	24.04	259
6	23.58	202	25.08	615	25.25	680	24.58	427	24.21	308	23.87	213	25.58	825	26.25	1200	24.58	427	24.67	458	24.42	374	24.08	270
7	23.54	189	25.08	615	25.33	715	24.54	414	24.16	293	23.91	223	25.75	910	26.00	1040	24.58	427	24.83	515	24.33	345	24.17	296
8	23.54	189	25.04	600	25.50	790	24.58	427	24.12	282	23.91	223	25.83	950	26.00	1040	24.67	458	24.92	550	24.33	345	24.17	296
9	23.50	176	25.04	600	25.62	845	24.62	441	24.08	270	23.96	237	25.91	995	26.00	1040	24.67	458	25.00	580	24.33	345	24.12	282
10	23.50	176	25.04	600	25.62	845	24.62	441	24.00	248	23.96	237	25.91	995	25.91	995	24.62	441	25.08	615	24.33	345	24.08	270
11	23.48	171	25.00	580	25.62	845	24.62	441	24.00	248	23.96	237	25.91	995	25.83	950	24.58	427	25.17	650	24.33	345	24.00	248
12	23.50	176	25.91	995	25.66	865	24.58	427	24.00	248	23.96	237	26.00	1040	25.79	930	24.58	427	25.25	680	24.33	345	23.92	226
13	23.50	176	25.91	995	25.71	890	24.62	441	24.00	248	24.00	248	25.96	1020	25.75	910	24.62	441	25.21	665	24.33	345	23.87	213
14	23.50	176	25.91	995	25.75	910	24.41	370	24.08	270	24.04	259	25.91	995	25.66	865	24.67	458	25.17	650	24.29	332	23.83	203
15	23.50	176	25.91	995	25.83	950	24.33	345	24.33	345	24.04	259	25.91	995	25.58	825	24.67	458	25.25	680	24.25	320	23.83	203
16	23.54	189	25.91	995	25.91	995	24.25	320	24.33	345	24.00	248	25.83	950	25.54	810	24.62	441	25.17	650	24.25	320	23.83	203
17	23.58	202	25.91	995	25.91	995	24.25	320	24.25	320	24.00	248	25.91	995	25.54	810	24.58	427	25.08	615	24.29	332	23.75	182
18	23.62	216	25.91	995	25.83	950	24.23	314	24.25	320	24.00	248	25.96	1020	25.50	790	25.00	580	25.17	650	24.29	332	23.71	172
19	23.75	260	25.50	790	25.75	910	24.16	293	24.25	320	24.00	248	25.96	1020	25.46	770	25.17	650	25.25	680	24.25	320	23.71	172
20	23.83	287	25.25	680	25.41	750	24.12	282	24.16	293	24.04	259	26.00	1040	25.41	750	25.17	650	25.25	680	24.17	296	23.63	154
21	24.00	345	25.00	580	25.37	735	24.12	282	24.08	270	24.04	259	26.33	1250	25.41	750	25.12	630	25.17	650	24.13	285	23.63	154
22	24.00	345	24.91	545	25.37	735	24.12	282	24.04	259	24.04	259	26.75	1520	25.37	735	25.08	615	25.17	650	24.13	285	23.63	154
23	24.08	371	24.83	515	25.33	715	24.12	282	24.04	259	24.08	270	26.96	1650	25.33	715	25.04	600	25.17	650	24.13	285	23.58	143
24	24.16	399	24.75	487	25.25	680	24.12	282	24.00	248	24.08	270	27.08	1730	25.29	700	25.00	580	25.17	650	24.13	285	23.54	134
25	24.33	457	24.66	455	25.16	645	24.12	282	24.00	248	24.08	270	27.16	1780	25.25	680	25.00	580	25.17	650	24.13	285	23.50	125
26	24.41	483	24.58	427	25.08	615	24.12	282	24.00	248	24.12	282	27.25	1840	25.21	665	24.92	550	25.17	650	24.13	285	23.50	125
27	24.66	555	24 62	441	25.00	580	24.12	282	23.91	223	24.16	293	27.33	1890	25.21	665	24.83	515	25.13	635	24.13	285	23.50	125
28	24.83	625	24.66	455	24.91	545	24.04	259	23.87	213	24.33	345	27.00	1680	25.16	645	24.75	487	25.08	615	24.13	285	23.54	134
29	24.91	650	24.66	455	24.83	515	24.08	270	.....	....	24.50	400	26.85	1570	25.16	645	24.67	458	25.04	600	24.13	285	23.54	134
30	25.08	710	24.75	487	24.75	487	24.04	259	.....	....	24.66	455	26.75	1520	25.00	580	24.67	458	24.92	550	24.13	285	23.58	143
31	25.12	725	.....	....	24.71	473	24.00	248	.....	....	24.75	487	.....	....	24.83	515	.....	....	24.83	515	24.13	285	.....	....

Monthly Discharge of Maganetawan River (South Branch) near Burk's Falls for 1916-7

Drainage Area, 257 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	725	171	312	2.52	.67	1.21	1.39
November "	995	427	669	3.87	1.66	2.60	2.90
December "	995	473	729	3.87	1.84	2.83	3.26
January (1917)	473	248	353	1.84	.96	1.37	1.58
February	345	213	279	1.34	.83	1.09	1.14
March	487	203	266	1.89	.79	1.04	1.20
April	1,890	487	1,142	7.35	1.89	4.44	4.95
May	1,460	515	905	5.68	2.00	3.52	4.06
June	650	427	494	2.53	1.66	1.92	2.14
July	680	458	598	2.65	1.78	2.33	2.69
August	515	285	337	2.00	1.11	1.31	1.51
September	285	125	203	1.11	.49	.79	.88
The year	1,890	125	526	7.35	.49	2.05	27.78

Mississippi River at Ferguson's Falls

Location—At the highway on the road through the Village of Ferguson's Falls, near lots 16 and 17, concession 12, Township of Drummond, County of Lanark.

Records Available—Discharge measurements from July, 1915, and gauge readings from July 13, 1915.

Drainage Area—1.042 square miles.

Gauge—0 to 6 feet of standard gauge plates secured to the inner face of the first pier from the south end of the bridge and near the downstream corner of the pier.

Channel and Control—Channel is straight for 300 feet above and ½ mile below the gauging station. The banks are not liable to overflow. There are 7 channels, formed by the piers of the bridge. The present control is a short distance below the section, and ice action there will affect the discharge relation at low winter stages, but this will not be the point of control for high-water stages. At certain stages measurements are made 1,500 feet below bridge.

Winter Flow—Discharge relation will be affected by ice.

Regulation—The river is regulated throughout its length by power and storage dams, as well as dams in connection with the timber industry.

Accuracy—Open flow relation will be good.

Observer—A. M. Sheppard, Ferguson's Falls.

Discharge Measurements of Mississippi River at Ferguson's Falls in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Dec. 18....	Campbell, L. L..	171	199	1.19	101.06	274 (a)	.....
1917							
Feb. 28....	" ..	218	371	1.34	101.62	498 (b)	.....
Apr. 10....	" ..	211	748	6.14	103.83	4,593	.....
May 22....	" ..	199	407	3.55	102.17	1,446	.....
June 15....	" ..	194	362	3.13	101.97	1,131	.....
July 18....	Ronald, F.....	177	245	2.26	101.42	554	.....
Aug. 11....	"	177	248	1.80	101.31	459	.....
Oct. 3....	"	233	227	1.32	101.13	301 (c)	.....

(a) Section partly ice-covered.
(b) Some ice effect.
(c) Reading taken at low-water section.

Daily Gauge Height and Discharge of Mississippi River at Ferguson's Falls for 1916-7

Drainage Area, 1,042 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	101.13	328	101.17	352	100.98	242	100.88	138	101.59	440	101.62	478	104.04	4870	103.50	3860	102.08	1260	101.54	640	101.46	565	101.17	352
2	101.10	310	101.15	340	100.98	242	100.88	135	101.60	466	101.60	462	104.19	5150	103.47	3800	102.01	1160	101.50	600	101.46	565	101.17	352
3	101.08	298	101.12	332	100.98	242	100.89	129	101.61	470	101.59	426	104.21	5190	103.40	3670	102.01	1160	101.46	565	101.44	550	101.17	352
4	101.08	298	101.11	316	100.96	234	100.90	129	101.63	500	101.58	426	104.21	5190	103.33	3540	101.97	1110	101.44	550	101.44	550	101.17	352
5	101.08	298	101.08	298	100.98	242	100.90	132	101.63	575	101.57	426	104.21	5190	103.30	3480	101.95	1090	101.42	530	101.42	530	101.17	352
6	101.08	298	101.08	298	101.00	250	100.90	135	101.66	600	101.59	447	104.19	5150	103.23	3350	101.92	1050	101.42	530	101.40	515	101.17	352
7	101.08	298	101.08	298	101.02	262	100.92	135	101.67	620	101.61	505	104.07	4920	103.15	3200	101.89	1020	101.42	530	101.39	510	101.15	340
8	101.06	286	101.08	298	101.08	298	100.90	126	101.69	620	101.60	515	104.08	4940	103.07	3050	101.84	960	101.37	492	101.37	492	101.14	334
9	101.07	292	101.10	310	101.08	298	100.90	117	101.71	550	101.60	515	103.96	4720	103.02	2960	101.83	945	101.35	480	101.35	478	101.15	340
10	101.11	316	101.08	298	101.08	298	100.92	108	101.68	525	101.59	500	103.81	4440	102.94	2810	101.81	920	101.34	470	101.33	462	101.13	328
11	101.13	328	101.07	292	101.02	262	100.93	111	101.67	515	101.56	492	103.73	4290	102.86	2650	101.88	1010	101.36	485	101.33	462	101.13	328
12	101.18	358	101.06	286	100.98	242	100.92	108	101.67	515	101.57	412	103.63	4100	102.77	2490	101.92	1050	101.42	535	101.31	448	101.13	328
13	101.20	370	101.04	274	101.00	250	100.94	108	101.74	515	101.61	440	103.48	3820	102.72	2400	101.93	1070	101.39	510	101.29	433	101.13	328
14	101.21	377	101.03	268	100.98	242	101.00	123	101.75	515	101.58	433	103.41	3690	102.65	2270	101.93	1070	101.40	515	101.28	426	101.10	310
15	101.21	377	101.02	262	100.98	242	101.00	126	101.77	515	101.57	419	103.33	3540	102.56	2090	101.91	1040	101.42	535	101.26	412	101.08	298
16	101.23	391	101.02	262	100.98	242	101.00	129	101.77	500	101.53	433	103.28	3440	102.51	2000	101.87	995	101.42	535	101.25	405	101.08	298
17	101.33	462	101.00	250	100.98	242	101.00	132	101.75	500	101.52	440	103.24	3370	102.47	1920	101.84	960	101.42	535	101.23	391	101.08	298
18	101.28	426	101.00	250	100.98	242	101.04	141	101.73	490	101.52	440	103.21	3310	102.41	1810	101.82	935	101.43	540	101.23	391	101.08	298
19	101.25	405	101.00	250	101.00	250	101.10	165	101.75	515	101.52	440	103.24	3370	102.35	1700	101.80	910	101.46	565	101.22	384	101.09	304
20	101.30	440	100.98	242	100.98	242	101.15	180	101.74	500	101.52	447	103.32	3520	102.28	1580	101.73	835	101.49	590	101.21	377	101.14	334
21	101.31	448	100.98	242	100.92	218	101.17	196	101.72	485	101.52	470	103.54	3930	102.24	1510	101.67	770	101.50	600	101.19	364	101.14	334
22	101.31	448	100.96	234	100.91	195	101.20	218	101.69	485	101.52	492	103.73	4290	102.22	1470	101.66	760	101.48	585	101.17	352	101.13	328
23	101.31	448	100.98	242	101.05	198	101.25	230	101.70	500	101.53	515	103.80	4420	102.25	1520	101.59	690	101.48	585	101.21	377	101.11	316
24	101.30	440	101.06	286	100.92	180	101.28	250	101.68	505	101.64	600	103.83	4480	102.25	1520	101.54	640	101.48	585	101.23	391	101.10	310
25	101.26	412	101.03	268	100.90	165	101.34	262	101.64	505	101.67	650	103.83	4480	102.25	1520	101.52	620	101.48	585	101.20	370	101.10	310
26	101.30	440	100.98	242	100.90	156	101.42	304	101.64	500	101.88	1010	103.80	4420	102.23	1490	101.50	600	101.48	585	101.21	377	101.10	310
27	101.26	412	100.92	218	100.90	150	101.46	340	101.65	485	102.46	1900	103.73	4290	102.20	1440	101.50	600	101.48	585	101.17	352	101.10	310
28	101.25	405	100.92	218	100.90	150	101.50	358	101.64	485	103.00	2920	103.64	4120	102.18	1410	101.49	590	101.48	585	101.16	346	101.12	322
29	101.22	384	100.93	222	100.88	150	101.53	377	.....	....	103.38	3630	103.61	4060	102.17	1400	101.51	610	101.48	585	101.15	340	101.12	322
30	101.20	370	100.96	234	100.88	144	101.55	398	.....	....	103.75	4320	103.55	3950	102.13	1330	101.55	650	101.48	585	101.15	340	101.12	322
31	101.17	352	.....	....	100.88	141	101.56	405	.....	....	103.96	4720	.....	....	102.10	1290	.....	....	101.48	585	101.17	352	.....	.....

Monthly Discharge of Mississippi River at Ferguson's Falls for 1916-7

Drainage Area, 1,042 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	462	286	371	.44	.27	.36	.42
November "	352	218	273	.34	.21	.26	.29
December "	298	141	223	.29	.14	.21	.24
January...(1917)	405	108	192	.39	.10	.18	.21
February.....	620	440	514	.59	.42	.49	.51
March.....	4,720	412	978	4.53	.40	.94	1.08
April.....	5,190	3,310	4,288	4.98	3.18	4.12	4.59
May.....	3,860	1,290	2,275	3.70	1.24	2.18	2.51
June	1,260	590	903	1.21	.57	.87	.97
July	640	470	554	.61	.45	.53	.61
August	565	340	429	.54	.33	.41	.47
September.....	352	298	325	.34	.29	.31	.35
The year	5,190	108	942	4.98	.10	.90	12.27

Mississippi River at Galetta

Location—In the Village of Galetta, Township of Fitzroy, County of Carleton, about one hundred feet above, and parallel to the highway bridge over the river. It is only a few hundred yards below the dam and power house of the Galetta Power & Milling Company.

Records Available—Discharge measurements from June, 1915, and gauge readings twice daily from June 24, 1915.

Drainage Area—1,456 square miles.

Gauge—0 to 9 feet of standard gauge plates secured to the left abutment of the highway bridge. High stages measured by rule from gauge.

Channel and Control—Channel is straight for 200 feet above and below the section to a little rapid. The river bed is composed of gravel and stones, with solid rock on the right bank and gravel on the left bank. The point of control is through a solid rock formation a hundred and fifty yards below the section.

Discharge Measurements—Made by wading and from a boat held up to tag line by cable. Extreme high-water measurements have to be made from the highway bridge.

Winter Flow—The winter conditions here will not seriously affect the gauge height and discharge relations.

Regulation—The river is subject to regulation throughout its entire length. In the upper river are storage dams for power purposes, as well as timber dams for driving purposes.

Accuracy—Owing to the wet season the wasted water has been considerably more than would usually be the case. This season's relations between gauge height and discharge are likely better than those of the ordinary year.

Co-operation—Discharge measurements made at the bridge by the Department of Public Works of Canada.

Observer—J. P. Coyne, Galetta.

Discharge Measurements of Mississippi River at Galetta in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 24....	Campbell, L.L..	75	150	3.47	244.55	519	.....
Nov. 13....	" ..	65	115	2.76	243.92	317	.....
Dec. 5....	" ..	64	125	3.11	244.17	389	.....
1917							
Jan. 23....	" ..	57	110	2.50	243.90	276(a)	.....
Feb. 27....	" ..	67	123	2.74	244.12	337(b)	.....
Mar. 17....	" ..	56	106	2.79	243.88	295(c)	.....
April 13....	" ..	106	1,120	3.77	250.99	4,218(d)	.....
" 16....	" ..	106	1,066	3.46	250.50	3,689(d)	.....
" 30....	" ..	103	1,047	3.39	250.32	3,458(d)	.....
May 10....	" ..	102	933	2.78	249.30	2,592(d)	.....
" 14....	" ..	102	872	2.62	248.74	2,281(d)	.....
" 25....	" ..	102	752	2,27	247.70	1,707(e)	.....
June 2....	Hatton	102	715	1,96	247.15	1,403(e)	.....
" 2....	"	102	715	2.11	247.15	1,599(e)	.....
" 9....	"	99	677	1.47	246.32	997(e)	.....
" 9....	"	99	677	1.80	246.32	1,218(e)	.....
Aug. 10....	Ronald, F.....	81	150	3.40	244.49	515	.....

(a) Ice may affect.
(b) Ice at gauge and along edges of section.
(c) Ice at gauge and at left bank.
(d) Reading taken from highway bridge. Surface velocities recorded and coefficient applied.
(e) Reading taken from highway bridge.

Daily Gauge Height and Discharge of Mississippi River at Galetta for 1916-7

Drainage Area, 1,456 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	243.99	330	244.03	345	244.15	391	243.78	250	244.03	345	244.11	376	251.99	5570	250.36	3470	247.34	1610	244.94	690	244.57	550	243.82	266
2	243.92	304	243.99	330	244.09	368	243.82	266	244.03	345	244.11	376	252.15	5780	250.36	3470	247.03	1480	244.98	705	244.65	580	243.78	250
3	244.03	345	244.03	345	243.94	311	243.86	280	243.86	280	244.03	345	252.40	6120	250.20	3320	246.20	1170	244.99	710	244.57	550	243.86	281
4	243.90	296	243.97	323	244.09	368	243.88	288	243.86	280	243.94	311	252.32	6010	250.03	3170	246.07	1110	244.90	675	244.30	448	243.95	315
5	243.90	296	243.86	281	244.11	376	243.94	311	243.99	330	244.03	345	252.28	5950	249.90	3070	246.15	1150	244.82	645	244.28	440	244.03	345
6	243.95	315	243.97	323	244.15	391	243.86	280	243.99	330	243.94	311	252.15	5780	249.74	2940	246.11	1130	244.82	645	244.24	425	244.09	368
7	243.90	296	243.99	330	244.28	440	243.74	235	243.95	315	243.94	311	252.53	6290	249.65	2870	246.15	1150	244.24	425	244.28	440	244.09	368
8	243.74	235	243.97	323	244.26	433	243.88	288	244.03	345	244.03	345	252.03	5620	249.61	2850	246.30	1210	244.20	410	244.30	448	244.04	349
9	243.78	250	243.92	304	244.24	425	243.82	286	244.03	345	244.08	364	251.82	5340	249.40	2700	246.28	1200	244.40	486	244.38	478	243.90	296
10	243.82	265	244.03	345	244.03	345	243.95	315	244.07	360	244.05	353	251.53	4950	249.28	2620	246.19	1170	244.57	550	244.38	478	243.86	281
11	243.94	311	244.03	345	244.01	338	244.03	345	243.95	315	244.03	345	251.40	4770	249.15	2530	246.40	1250	244.67	590	244.45	505	243.86	281
12	243.94	311	243.92	304	244.15	391	244.15	391	244.03	345	243.94	311	251.28	4610	249.11	2510	246.57	1300	244 76	625	244.28	440	243.84	273
13	244.03	345	243.94	311	244.11	376	244.07	360	243.99	330	243.88	288	251.03	4270	248.94	2400	246.53	1290	244.78	630	244.28	440	243.86	281
14	244.03	345	243.94	311	244.03	345	243.95	315	244.07	360	243.92	304	250.82	3980	248.78	2310	246.51	1280	244.78	630	244.15	391	243.88	288
15	243.99	330	243.90	296	244.01	338	243.90	296	243.99	330	243.97	322	250.70	3820	248.61	2210	246.54	1290	244.82	645	244.20	410	243.99	330
16	244.13	383	243.94	311	244.01	338	243.95	315	244.15	391	244.01	338	250.53	3640	248.57	2180	246.36	1230	244.74	615	244.24	425	243.90	296
17	244.19	406	243.94	311	243.86	280	244.03	345	244.11	376	243.94	311	250.40	3510	248.34	2060	246.28	1200	244.86	660	244.20	410	243.86	281
18	244.28	440	243.99	330	243.92	304	244.05	353	243.98	326	243.90	296	250.24	3360	248.30	2040	246.30	1210	244.90	675	244.17	399	243.78	250
19	244.40	486	243.94	311	244.03	345	244.03	345	244.03	345	243.99	330	250.15	3280	248.20	1990	246.28	1200	245.03	725	244.15	391	243.88	288
20	244.53	535	244.01	338	243.94	311	244.03	345	244.07	360	243.78	250	250.20	3320	247.94	1860	246.20	1170	245.07	740	244.20	410	243.88	288
21	244.70	600	244.01	338	244.03	345	243.86	280	244.07	360	243.94	311	250.61	3720	247.74	1770	246.09	1120	245.45	885	244.17	399	243.99	330
22	244.74	615	243.99	330	244.03	345	244.03	345	244.15	391	243.94	311	250.61	3720	247.74	1770	245.90	1060	245.24	805	244.11	376	243.97	323
23	244.49	520	244.01	338	244.03	345	243.95	315	244.20	410	244.17	391	250.57	3680	247.84	1810	245.78	1010	245.15	770	244.05	353	243.92	304
24	244.49	520	244.03	345	243.82	266	243.99	330	244.17	398	245.63	950	250.45	3560	247.84	1810	245.57	930	244.98	705	244.20	410	243.86	281
25	244.53	535	243.97	323	243.78	250	243.97	323	243.99	330	245.74	995	250.53	3640	247.72	1760	245.36	850	244.90	675	244.40	486	243.90	296
26	244.61	565	243.99	330	243.94	311	244.05	353	244.07	360	248.40	2090	250.57	3680	247.59	1710	245.36	850	244.86	660	244.32	456	243.86	281
27	244.65	580	243.92	304	243.92	304	244.03	345	244.07	360	251.70	5180	250.53	3640	247.44	1650	245.34	845	244.74	615	244.21	414	243.95	315
28	244.42	494	244.01	338	243.99	330	243.95	315	244.07	360	252.57	6350	250.49	3600	247.36	1610	245.13	760	244.73	610	244.15	391	243.95	315
29	244.18	402	243.99	330	243.92	304	244.03	345	.....	.....	250.94	4150	250.40	3510	247.32	1600	245.15	770	244.56	545	244.11	376	243.95	315
30	244.03	345	244.05	353	243.94	311	243.90	296	.....	.....	250.70	3820	250.32	3430	247.32	1600	245.20	790	244.45	505	243.90	296	243.88	288
31	243.99	330	.....	.....	243.78	250	243.90	296	.....	.....	250.90	4090	.....	....	247.32	1600	.....	....	244.52	530	243.80	258	.....	....

Monthly Discharge of Mississippi River at Galetta for 1916-7

Drainage Area, 1,456 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October...(1916)	615	235	398	.42	.16	.27	.31
November "	353	281	325	.24	.19	.22	.25
December "	440	250	341	.30	.17	.23	.27
January ..(1917)	391	235	315	.27	.16	.22	.25
February	410	280	347	.28	.19	.24	.25
March.....	6,350	250	1,135	4.36	.17	.78	.90
April.....	6,290	3.280	4,405	4.32	2.25	3.03	3.38
May.....	3,470	1,600	2,299	2.38	1.10	1.58	1.82
June.....	1,610	760	1,126	1.11	.52	.77	.86
July.....	885	410	638	.61	.28	.44	.51
August.....	580	258	428	.40	.18	.29	.33
September.....	368	250	301	.25	.17	.21	.23
The year	6,350	235	1,004	4.36	.16	.69	9.37

Mississippi River near Snow Road

Location—At the highway bridge about two miles below the Village of Snow Road, Township of Sherbrooke, County of Lanark.

Records Available—Discharge measurements from July, 1915, and gauge readings on week days since July 30, 1915.

Drainage Area—446 square miles.

Gauge—0 to 6 ft. of standard gauge plates secured vertically to the downstream side of the right abutment of the highway bridge. The elevation of the zero on gauge is assumed as 100.00.

Channel and Control—The channel approaches and leaves the section at a slight angle. The banks are high, and are not liable to overflow. The bridge pier forms two channels at the gauging section. Earth, rocks and gravel in the river bed, not shifting. Control for ordinary stages not well defined. At very high water stages the point of control is probably the head of the rapids just above High Falls.

Discharge Measurements—Measurements made from bridge at all stages.

Winter Flow—Discharge relation affected by ice.

Regulation—The power and lumber companies operating on this river have storage dams above this point.

Accuracy—No Sunday readings have been secured by gauge-readers, but the fluctuation in stage is slow. The open-water relation should be good.

Observer—Fred. Jackson, Snow Road.

Discharge Measurements of Mississippi River near Snow Road in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 1....	Campbell, L. L..	58	300	.69	101.92	208	.....
Nov. 17....	" ..	58	283	.47	101.62	134 (a)	.....
Dec. 8....	" ..	58	283	.45	101.58	127 (b)	.....
1917							
Feb. 20....	Hatton	54	229	.73	102.24	166 (b)	.....
Mar. 21....	Campbell, L. L..	54	250	.72	102.16	180 (b)	.....
Apr. 12....	" ..	63	392	2.21	103.50	868	.....
May 9....	" ..	58	444	3.22	104.42	1,430	.....
June 7....	Hatton	58	346	1.55	102.75	537	.....
July 19....	Ronald, F	58	316	.96	102.21	305	.....
Aug. 8....	Hatton, M.R....	58	309	1.03	102.29	323	.....
Oct. 16....	" ..	58	277	.62	101.87	191	.....

(a) Ice above and below section.
(b) Ice measurement.

Daily Gauge Height and Discharge of Mississippi River near Snow Road for 1916-7

Drainage Area, 446 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	243	101.88	200	101.50	116	101.00	72	102.17	171	102.08	129	.....	1300	105.21	2010	103.00	620	.....	352	102.58	428	102.13	271
2	101.96	237	101.88	200	101.50	116	101.00	72	102.17	171	102.08	129	104.13	1250	105.17	1980	103.00	620	102.33	336	102.50	398	.....	272
3	101.96	237	101.85	192	.....	116	101.00	72	102.17	171	102.08	129	104.08	1220	105.08	1920	.....	600	102.33	336	102.46	383	102.14	274
4	101.96	237	101.85	186	101.50	116	101.00	72	.....	171	.....	132	104.00	1160	105.00	1860	102.92	580	102.33	336	102.42	368	102.12	267
5	101.92	229	.....	184	101.50	116	101.04	74	102.17	171	102.12	136	103.92	1120	104.88	1780	102.88	560	102.29	322	.....	344	102.10	261
6	101.92	229	101.81	181	101.54	122	101.08	75	102.17	171	102.12	136	103.67	970	.....	1700	102.83	535	102.25	309	102.28	319	102.08	255
7	101.92	229	101.79	176	101.58	129	.....	75	102.17	171	102.12	136	103.50	875	104.67	1630	102.75	500	102.25	309	102.33	336	102.08	255
8	.....	279	101.75	166	101.58	129	101.08	75	102.17	171	102.10	154	.....	850	104.50	1510	102.71	482	.....	302	102.22	299	102.08	255
9	102.33	329	101.75	166	101.58	129	101.17	79	102.19	176	102.08	150	103.42	830	104.42	1450	102.75	500	102.21	296	102.29	322	.....	255
10	102.38	344	101.73	161	.....	121	101.17	79	102.21	181	102.08	150	103.38	810	104.33	1390	.....	540	102.25	309	102.25	309	102.08	255
11	102.42	356	101.71	156	101.58	114	101.25	82	.....	186	.....	160	103.42	830	104.21	1310	102.92	580	102.25	309	102.25	309	102.08	255
12	102.38	344	.....	161	101.50	104	101.33	86	102.25	192	102.17	171	103.58	915	104.13	1250	102.87	555	102.25	309	.....	309	102.08	255
13	102.33	329	101.75	166	101.42	98	101.42	91	102.25	192	102.25	192	103.79	1040	.....	1160	102.83	535	102.23	303	102.25	309	102.08	255
14	102.29	318	101.69	152	101.33	92	.....	90	102.25	192	102.25	192	103.92	1120	103.83	1060	102.75	500	102.21	296	102.25	309	102.08	255
15	.....	308	101.67	147	101.25	88	101.46	88	102.25	192	102.25	192	.....	1170	103.67	970	102.71	482	.....	296	102.21	296	102.08	255
16	102.21	298	101.62	136	101.17	84	101.50	90	102.25	192	102.25	192	104.08	1220	103.58	915	102.67	465	102.21	296	102.21	296	.....	252
17	102.21	298	101.62	136	.....	81	101.54	92	102.23	186	102.25	192	104.21	1310	103.50	875	.....	446	102.21	296	102.21	296	102.06	249
18	102.21	298	101.58	129	101.08	79	101.58	95	.....	186	.....	187	104.42	1450	103.42	830	102.58	428	102.21	296	102.21	296	102.04	244
19	102.21	298	.....	129	101.00	76	101.60	96	102.23	186	102.21	181	104.63	1600	103.33	785	102.52	405	102.21	296	.....	296	102.04	244
20	102.23	302	101.58	129	101.00	76	101.75	110	102.25	166	102.17	171	104.83	1740	.....	785	102.50	398	102.25	309	102.21	296	102.04	244
21	102.25	308	101.58	129	101.00	76	.....	110	102.25	166	102.17	197	105.08	1920	103.33	785	102.46	383	102.25	309	102.17	283	102.04	244
22	.....	298	101.54	122	101.00	76	101.75	110	102.25	166	102.17	197	.....	1920	103.29	760	102.42	368	.....	354	102.17	283	102.04	244
23	102.17	288	101.50	116	101.00	76	101.75	110	102.21	156	102.19	229	105.08	1920	103.25	740	102.33	336	102.50	398	102.19	290	.....	238
24	102.12	275	101.50	116	.....	77	101.75	110	102.17	147	102.21	264	105.25	2040	103.25	740	.....	336	102.58	428	102.19	290	102.00	232
25	102.08	265	101.50	116	101.04	78	101.71	105	.....	147	.....	331	105.21	2010	103.25	740	102.33	336	102.58	428	102.19	290	102.00	232
26	102.00	245	.....	116	101.04	78	102.00	154	102.17	147	102.50	398	105.17	1980	103.21	720	102.33	336	102.67	465	.....	287	102.00	232
27	102.00	245	101.50	116	101.04	74	102.10	178	102.12	136	103,42	830	105.25	2040	.....	710	102.40	361	102.67	465	102.17	283	102.00	232
28	102.00	245	101.48	114	101.04	74	.....	185	102.08	129	104.67	1630	105.29	2060	103.17	700	102.38	354	102.67	465	102.17	283	102.00	232
29	.....	237	101.46	111	101.02	73	102.15	192	.....	...	104.62	1590	.....	2050	103.08	655	102.42	368	.....	455	102.17	283	102.00	232
30	101.92	229	101.50	116	101.02	73	102.17	197	.....	...	104.58	1570	105.25	2040	103.00	620	102.42	368	102.62	444	102.17	283	.....	232
31	101.92	229	.....	...	.....	73	102.17	197	.....	...	104.25	1340	.....	....	102.96	600	.....	...	102.62	444	102.13	271	.....	.....

Monthly Discharge of Mississippi River near Snow Road for 1916-7

Drainage Area, 446 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October ..(1916)	356	229	278	.80	.51	.62	.71
November "	200	111	148	.45	.25	.33	.37
December "	129	73	95	.29	.16	.21	.24
January ..(1917)	197	72	107	.44	.16	.24	.28
February	192	129	171	.43	.29	.38	.40
March	1,630	129	380	3.65	.29	.85	.98
April	2,060	810	1,425	4.62	1.82	3.20	3.57
May	2,010	600	1,127	4.51	1.35	2.52	2.91
June.....	620	336	463	1.39	.75	1.04	1.16
July	465	296	351	1.04	.66	.79	.91
August	428	271	311	.96	.61	.70	.81
September	274	232	249	.61	.52	.56	.62
The year	2,060	72	426	4.62	.16	.96	12.96

Moira River near Foxboro

Location—Three hundred feet above G.T.R. Crossing, and six hundred feet east of Foxboro Station, on the G.T.R.-Belleville, Peterboro Branch. Near Lot 5, Concession VI, Township of Thurlow, County of Hastings.

Records Available—Monthly discharge measurements from September, 1915, and gauge readings from October 12, 1915.

Drainage Area—1,038 square miles.

Gauge—A boxed chain gauge on the right bank of the river against a tree 400 feet above section. When the gauge reads zero the elevation of the water is 320.46.

Channel and Control—At one side of the river at the section are boulders and rocks, but the rest of the section is smooth, solid rock, liable to no movement at all. The control is only a few feet below the section and is not likely to freeze over in winter except for short periods of time.

Discharge Measurements—At ordinary stages the measurements are made by wading, at tag line.

Winter Flow—The relation of gauge height to discharge will be but slightly affected by ice, but likely in a fairly uniform manner throughout the winter.

Regulation—The river above the section has dams in many places besides the regulation for the lumber interest, on different tributary lakes and streams.

Accuracy—Open water relation will be good.

Observer—C. Stewart, Foxboro P.O.

Discharge Measurements of Moira River near Foxboro in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 12....	Campbell, L. L..	115	107	.67	321.50	72	.....
Nov. 22....	" ..	144	149	.74	321.65	110 (a)	.....
Dec. 22....	" ..	132	199	1.83	322.28	364 (b)	.....
1917							
Feb. 16....	" ..	230	227	1.46	322.11	333 (c)	.....
Mar. 7....	" ..	162	226	1.21	321.97	273 (d)	.....
April 6....	" ..	211	2,946	2.33	327.25	6,868 (e)	.....
" 27....	" ..	210	2,425	1.18	324.69	2,850 (e)	.....
May 17....	" ..	205	2,133	.51	323.31	1,088	.....
June 15 ...	" ..	159	328	2.18	322.91	717	.....
Aug. 16....	Ronald, F	148	148	6.00	321.60	92	.....
Oct. 9....	"	151	156	.67	321.33	104	.....

(a) Ice above section.
(b) Ice at gauge and above section.
(c) Ice measurement.
(d) Ice measurement covered above section.
(e) Reading taken 450 feet above regular section.

Daily Gauge Height and Discharge of Moira River near Foxboro for 1916-7

Drainage Area, 1,038 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	321.60	105	321.62	140	321.91	228	322.13	314	322.16	327	322.04	276	328.14	10900	324.35	2330	323.16	940	322.45	468	321.93	236	321.25	70
2	321.60	105	321.66	150	321.91	228	322.15	322	322.16	327	322.06	284	327.74	9880	324.30	2210	323.11	900	322.45	468	321.90	225	321.25	70
3	321.58	98	321.66	150	321.91	228	322.15	322	321.71	163	322.08	292	327.50	9270	324.30	2210	323.27	1030	322.41	446	321.90	225	321.24	69
4	321.56	92	321.64	145	321.95	242	322.15	322	321.74	172	322.08	292	327.36	8910	324.28	2180	323.23	1000	322.34	410	321.96	246	321.24	69
5	321.54	85	321.63	142	322.05	280	322.16	327	321.77	181	322.12	309	327.27	8680	324.19	2060	323.19	965	322.34	410	321.77	181	321.22	67
6	321.52	79	321.61	138	322.13	314	322.25	368	321.81	194	322.10	300	327.23	8580	324.07	1890	323.14	925	322.34	410	321.74	172	321.22	67
7	321.54	85	321.61	138	322.21	350	322.25	368	321.84	204	322.11	304	327.34	8860	323.97	1760	323.12	905	322.33	405	321.71	163	321.22	67
8	321.54	85	321.60	135	322.21	350	322.25	368	321.87	214	322.11	304	327.20	8500	323.89	1670	323.04	845	322.30	390	321.68	155	321.20	65
9	321.55	88	321.63	142	322.35	415	322.26	372	321.91	228	322.11	304	327.03	8070	323.84	1610	323.00	815	322.30	390	321.74	172	321.20	65
10	321.54	85	321.64	145	322.36	420	322.27	376	321.94	239	322.15	322	326.69	7200	323.79	1550	322.98	800	322.30	390	321.74	172	321.21	66
11	321.54	85	321.66	150	322.46	473	322.24	363	321.97	250	322.16	327	326.42	6520	323.69	1440	322.97	790	322.32	400	321.71	163	321.20	65
12	321.54	85	321.69	158	322.46	473	322.16	327	322.01	264	322.20	345	326.22	6010	323.63	1380	322.95	780	322.34	410	321.64	145	321.18	63
13	321.58	98	321.68	155	322.33	405	322.16	327	322.04	276	322.20	345	325.89	5160	323.55	1300	323.07	865	322.34	410	321.65	148	321.16	61
14	321.56	92	321.68	155	322.37	425	322.19	340	322.07	288	322.21	350	325.70	4680	323.47	1220	323.59	1340	322.34	410	321.65	148	321.14	59
15	321.54	85	321.68	155	322.37	425	322.19	340	322.10	300	322.22	354	325.40	4020	323.38	1130	323.13	915	322.32	400	321.62	140	321.13	58
16	321.58	98	321.68	155	322.38	430	322.19	340	322.11	304	322.29	386	325.28	3760	323.32	1080	323.04	845	322.32	400	321.59	132	321.14	59
17	321.54	85	321.69	158	322.33	405	322.16	327	322.18	336	322.32	400	325.15	3530	323.18	960	322.97	790	322.32	400	321.28	73	321.14	59
18	321.55	88	321.68	155	322.33	405	322.19	340	322.13	314	322.47	478	324.93	3160	323.02	830	322.93	760	322.33	405	321.26	71	321.14	59
19	321.62	112	321.68	155	322.27	376	322.18	336	322.11	304	322.55	520	324.79	2930	323.06	860	322.87	720	322.27	376	321.25	70	321.15	60
20	321.74	155	321.68	155	322.25	368	322.17	332	322.08	292	322.62	560	324.73	2840	323.19	965	322.81	675	322.26	376	321.25	70	321.18	63
21	321.74	155	321.68	155	322.25	368	322.16	327	322.06	284	322.66	585	324.67	2750	323.18	960	322.78	660	322.23	358	321.26	71	321.18	63
22	321.74	155	321.68	155	322.25	368	322.16	327	322.07	288	322.84	700	324.92	3140	323.17	950	322.75	640	322.20	345	321.22	67	321.16	61
23	321.72	148	321.69	158	322.18	336	322.15	322	322.06	284	323.28	1040	324.93	3160	323.16	940	322.71	615	322.18	336	321.25	70	321.16	61
24	321.69	137	321.70	160	322.25	368	322.15	322	322.05	280	324.07	1890	324.98	3240	323.26	1030	322.61	555	322.16	327	321.25	70	321.16	61
25	321.69	137	321.68	155	322.23	358	322.15	322	322.03	272	324.44	2410	324.88	3080	323.35	1100	322.54	515	322.13	314	321.25	70	321.16	61
26	321.67	130	321.69	158	322.20	345	322.16	327	322.05	280	325.21	3640	324.78	2920	323.40	1150	322.52	505	322.10	300	321.22	67	321.16	61
27	321.68	133	321.72	166	322.21	350	322.16	327	322.10	300	326.07	5620	324.71	2810	323.39	1140	322.49	489	322.08	292	321.20	65	321.16	61
28	321.68	133	321.73	169	322.25	368	322.16	327	322.04	276	327.53	9350	324.69	2780	323.36	1110	322.44	462	322.06	284	321.25	70	321.16	61
29	321.64	119	321.83	200	322.19	340	322.14	318	.....	....	328.38	11510	324.59	2630	323.30	1060	322.54	515	322.01	264	321.22	67	321.16	61
30	321.64	119	321.87	214	322.16	327	322.20	345	.....	....	328.75	12460	324.46	2440	323.23	1000	322.47	478	321.94	239	321.22	67	321.18	63
31	321.59	102	.....	....	322.12	309	322.16	327	.....	....	328.56	11970	.....	.....	323.18	960	.....	....	321.93	236	321.22	67	.....	....

Monthly Discharge of Moira River near Foxboro for 1916-7.

Drainage Area, 1,038 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	155	79	108	.15	.08	.10	.12
November "	214	135	156	.21	.13	.15	.17
December "	473	228	357	.46	.22	.34	.39
January (1917)	376	314	336	.36	.30	.32	.37
February	336	163	266	.32	.16	.26	.27
March.....	12,460	276	2,201	12.00	.27	2.12	2.44
April.....	10,900	2,440	5,347	10.50	.235	5.15	5.74
May.....	2,330	830	1,356	2.24	.80	1.31	1.51
June.....	1,340	462	768	1.29	.45	.74	.83
July.....	468	236	370	.45	.23	.36	.42
August.....	246	65	124	.24	.06	.12	.14
September	70	58	63	.07	.06	.06	.07
The year	12,460	58	953	12.00	.06	.92	12.46

Muskoka River (North Branch) near Port Sydney

Location—At the highway bridge near the Village of Port Sydney and ¼ mile below Mary Lake, on lot 25, concession 5, Township of Stephenson, Muskoka District.

Records Available—Discharge measurements from April, 1915. Daily gauge heights from April 16, 1915.

Drainage Area—560 square miles.

Gauge—Vertical steel staff with enamelled face graduated in feet and inches and fastened to abutment on left upstream side of bridge. Zero of gauge (elev. 7.00 feet) is referred to a bench mark (elev. 24.78 feet) painted on top of right abutment, downstream side.

Channel—Straight for about 1,500 feet above and 500 feet below gauging station. Both banks are high, wooded, and not liable to overflow. The bed of the channel is composed of clay and gravel.

Discharge Measurements—Made from highway bridge with a small Price current meter.

Winter Flow—Open water conditions throughout the year.

Regulation—The operation of dam at Mary Lake during certain periods of the year will cause fluctuation at the gauge.

Accuracy—The rating curve is well defined, and estimates of discharge are good.

Observer—A. E. McInnes, Port Sydney.

Discharge Measurements of Muskoka River (North Branch) near Port Sydney in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Nov. 30....	Murray, W. S..	55	357	3.60	9.66	1,285	.....
1917	" ..						
Feb. 13....		46	258	.75	7.87	194 (a)	.....
Mar. 22....	" .	46	265	1.01	8.08	268	.....
Apr. 12....	" ..	57	472	6.33	11.66	2,980	.....
May 9....	" ..	48	280	1.23	8.27	344	.....
June 21....	Campbell, L. L..	54	384	2.95	9.33	1,131	.....
July 27....	Ronald, F.....	56	349	3.66	9.55	1,282 (b)	.....
Aug. 25....	"	49	277	1.26	8.25	350	.....
Sept. 25....	"	42	257	.40	7.71	104	.....

(a) Thin ice on control and at section.
(b) Dam above opened during metering.

Daily Gauge Height and Discharge of Muskoka River (North Branch) near Port Sydney for 1916-7

Drainage Area, 560 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	7.83	125	9.75	1390	10.49	1950	8.91	775	8.33	398	8.08	249	10.41	1890	12.16	3520	10.98	1630	9.00	840	8.42	452	8.08	249
2	7.83	125	9.71	1360	10.41	1890	8.66	605	8.33	398	8.08	249	10.75	2160	12.00	3340	9.96	1540	9.00	840	8.30	380	8.08	249
3	7.83	125	9.50	1200	10.41	1890	8.50	500	8.33	398	8.08	249	11.41	2740	11.91	3240	9.54	1230	9.25	1010	8.17	302	8.08	249
4	7.83	125	9.50	1200	10.41	1890	8.58	550	8.33	398	8.08	249	11.99	3330	11.83	3150	8.92	785	9.25	1010	8.21	326	8.08	249
5	7.83	125	9.50	1200	10.54	1990	8.58	550	7.91	155	8.08	249	12.10	3450	11.50	2820	8.42	452	9.21	985	8.17	302	8.08	249
6	7.71	88	9.50	1200	10.62	2060	8.58	550	8.00	205	8.08	249	12.00	3340	11.33	2670	8.29	374	9.17	960	8.17	302	8.08	249
7	7.71	88	9.50	1200	10.75	2160	8.58	550	8.00	205	8.08	249	11.91	3240	11.16	2510	8.58	550	8.75	665	8.17	302	7.96	183
8	7.83	125	9.41	1130	10.83	2220	8.75	665	8.00	205	8.08	249	12.00	3340	9.91	1510	9.21	985	9.33	1070	8.33	398	8.08	249
9	7.83	125	9.33	1070	10.91	2290	8.83	720	8.00	205	8.08	249	12.00	3340	8.50	500	9.17	960	9.67	1330	8.17	302	8.25	350
10	7.91	155	9.33	1070	11.37	2700	8.83	720	7.83	125	8.08	249	11.75	3070	9.25	1010	9.17	960	10.00	1570	8.17	302	8.21	326
11	7.91	155	9.08	895	11.33	2670	8.83	720	7.83	125	8.08	249	11.75	3070	10.50	1960	9.08	895	10.04	1600	8.08	249	8.00	205
12	7.85	132	9.08	895	11.21	2560	8.83	720	7.83	125	8.16	296	11.66	2980	10.58	2020	8.92	785	10.08	1630	8.08	249	7.96	183
13	7.87	140	9.12	925	11.04	2410	8.75	665	7.83	125	8.16	296	11.58	2900	10.54	1990	8.83	720	10.12	1670	8.17	302	8.25	350
14	7.87	140	9.12	925	10.91	2290	8.75	665	7.83	125	8.16	296	11.46	2780	10.41	1890	9.08	895	10.50	1960	8.17	302	7.96	183
15	7.87	140	9.12	925	10.71	2130	8.75	665	7.83	125	8.16	296	11.33	2670	9.96	1540	9.38	1110	10.29	1790	8.25	350	8.02	216
16	7.87	140	9.12	925	10.50	1960	8.66	605	7.83	125	8.16	296	11.21	2560	9.83	1450	9.50	1200	10.13	1670	8.25	350	8.00	205
17	8.08	249	8.91	775	10.50	1960	8.66	605	7.83	125	8.16	296	11.00	2370	8.79	695	9.25	1010	10.62	2060	8.25	350	8.00	205
18	8.16	296	8.91	775	10.50	1960	8.66	605	7.83	125	8.08	249	11.00	2370	8.83	720	9.12	925	10.38	1860	8.25	350	7.83	125
19	8.45	470	8.83	720	10.41	1890	8.66	605	7.83	125	8.08	249	11.00	2370	8.91	775	9.17	960	10.42	1900	8.42	452	7.83	125
20	8.75	665	8.75	665	10.41	1890	8.66	605	7.83	125	8.08	249	11.08	2440	9.16	950	9.35	1090	10.46	1930	8.42	452	7.83	125
21	8.46	476	8.46	476	10.25	1760	8.66	605	7.83	125	8.08	249	11.08	2440	8.99	835	9.33	1070	10.08	1630	8.42	452	7.83	125
22	8.41	446	8.46	476	10.25	1760	8.66	605	7.83	125	8.08	249	11.08	2440	8.83	720	9.21	985	10.08	1630	8.42	452	7.83	125
23	9.41	1130	8.45	470	9.91	1510	8.33	398	8.00	205	8.08	249	12.62	4090	8.62	580	9.08	895	10.00	1570	8.33	398	7.83	125
24	9.50	1200	8.52	515	9.33	1070	8.33	398	8.00	205	8.16	296	12.91	4460	8.50	500	9.00	840	8.83	720	8.29	374	7.83	125
25	9.54	1230	8.50	500	9.25	1010	8.54	525	8.00	205	8.08	249	13.00	4580	8.33	398	8.58	550	8.92	785	8.25	350	7.75	100
26	9.78	1410	8.50	500	9.25	1010	8.58	550	8.08	249	8.08	249	13.16	4790	8.33	398	8.83	720	9.42	1140	8.25	350	7.69	83
27	10.08	1630	8.75	665	9.08	895	8.66	605	8.08	249	8.16	296	13.00	4580	8.33	398	8.50	500	9.50	1200	8.25	350	7.67	79
28	10.00	1570	8.79	695	9.08	895	8.50	500	8.08	249	8.16	296	13.00	4580	9.37	1100	8.58	550	8.83	720	8.25	350	7.69	83
29	9.91	1510	8.87	750	9.00	840	8.50	500	.....	....	8.45	470	12.79	4580	9.58	1260	9.08	895	8.75	665	8.25	350	7.67	79
30	9.91	1510	9.70	1350	8.91	775	8.50	500	.....	....	9.16	950	12.50	3930	9.78	1410	9.08	895	8.75	665	8.08	249	7.79	112
31	9.62	1290	.....	.....	8.91	775	8.50	500	.....	....	10.37	1860	.....	....	10.00	1580	.....	.....	8.71	635	8.08	249	.....	.....

Monthly Discharge of Muskoka River (North Branch) near Port Sydney for 1916-7

Drainage Area, 560 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile.			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	1,570	88	552	2.80	.16	.99	1.14
November "	1,390	470	895	2.48	.84	1.60	1.79
December "	2,700	775	1,776	4.82	1.38	3.17	3.63
January (1917)	775	398	591	1.38	.71	1.06	1.22
February	398	125	198	.71	.22	.35	.36
March	1,860	249	344	3.32	.44	.61	.70
April	4,790	1,890	3,229	8.55	3.38	5.77	6.43
May	3,520	398	1,530	6.29	.71	2.73	3.15
June	1,630	374	899	2.91	.67	1.61	1.80
July	2,060	635	1,281	3.68	1.13	2.29	2.64
August	452	249	345	.81	.44	.62	.71
September	350	79	185	.62	.14	.33	.37
The year	4,790	79	989	8.55	.14	1.77	23.97

Muskoka River (South Branch) at Tretheway's Falls

Location—At small steel highway bridge known as Tretheway's Falls Bridge, about 1 mile south of the Muskoka Falls Post Office, and about 7 miles south of the Town of Bracebridge, Township of Draper, Muskoka District.

Records Available—Discharge measurements from August, 1912. Daily gauge heights from June 4, 1914.

Drainage Area—668 square miles.

Gauge—As there is no available place for establishing a permanent staff gauge, a bench mark (elevation 25.00), painted on a stringer, on the up-stream side of the bridge, is used in ascertaining the water elevation, by measuring down to the surface of the stream with a graduated staff. It is referred to a bench mark (elevation 33.08) painted on a large rock on the right bank, 90 feet to the right of the downstream side of the bridge.

Channel and Control—Straight for about 300 feet above and 300 feet below the station. The banks are fairly high, rocky and wooded and will not overflow. The current is very swift and the bed of stream is rough and rocky, with a heavy slope about 250 feet below the section.

Discharge Measurements—Made from the downstream side of the bridge with a Price current meter and a stay line.

Winter Flow—The gauge is located where the current is swift and ice seldom forms across the river for the entire width. The relation of gauge height to discharge is but slightly affected by ice.

Accuracy—Measurements made at Black's Bridge 1 mile above, were used in conjunction with those made at Tretheway's Falls, and a fairly well-defined rating curve has been established. Open water curve used throughout the year.

Observer—Wesley Morrow, Muskoka Falls.

Discharge Measurements of Muskoka River (South Branch) at Tretheway's Falls in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 12....	Murray, W. S...	42	129	2.55	12.92	330	.....
Nov. 29....	"	89	1,427	.64	14.84	909 (a)	.....
1917							
Jan. 17....	"	52	258	4.80	15.25	1,239	.....
Feb. 13....	"	50	216	2.95	14.50	636	.....
Mar. 21....	"	50	168	2.28	13.45	386 (b)	.....
April 10....	"	89	1,547	.89	15.80	1,379 (a)	.....
May 9....	"	105	1,702	1.41	17.50	2,409 (a)	.....
June 20....	Campbell, L. L..	104	1.633	1.11	16.33	1,820 (a)	.....
July 25....	Ronald, F	47	225	4.18	14.58	941	.....
Aug. 25....	"	48	209	2.20	14.08	464	.....
Sept. 25....	"	39	180	1.64	13.54	296	.....
Oct. 30....	"	40	179	2.05	13.83	368	.....

(a) Reading taken at Black's bridge.
(b) Ice may affect.

Daily Gauge Height and Discharge of Muskoka River (South Branch) at Tretheway's Falls for 1916-7

Drainage Area, 668 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	13.17	385	13.59	302	14.75	755	15.92	1400	14.67	715	14.09	456	16.00	1450	18.67	3540	16.00	1450	16.00	1450	14.50	630	14.00	425
2	13.17	385	13.59	302	14.67	715	15.84	1350	14.59	675	14.09	456	16.17	1550	18.67	3540	15.84	1350	16.00	1450	14.33	550	14.00	425
3	13.17	385	13.67	323	14.50	630	15.75	1300	14.50	630	14.00	425	16.50	1750	18.59	3450	15.67	1250	16.00	1450	14.33	550	14.00	425
4	13.17	385	13.67	323	14.42	590	15.67	1250	14.50	630	14.00	425	16.75	1900	18.50	3350	15.83	1350	16.00	1450	14.33	550	14.00	425
5	13.09	374	13.67	323	14.42	590	15.50	1150	14.50	630	14.00	425	16.84	1960	18.34	3180	15.83	1350	16.00	1450	14.33	550	14.00	425
6	13.09	374	13.75	345	14.92	840	15.34	1050	14.42	590	13.92	397	17.00	2070	18.00	2860	16.00	1450	16.00	1450	14.25	520	13.92	397
7	13.09	374	13.75	345	15.34	1050	15.17	965	14.42	590	13.84	372	16.50	1750	17.67	2560	16.00	1450	16.00	1450	14.33	550	13.92	397
8	13.09	374	13.75	345	15.67	1250	15.17	965	14.42	590	13.75	345	16.00	1450	17.50	2420	16.17	1550	16.00	1450	14.42	590	13.92	397
9	13.09	374	13.84	372	15.84	1350	15.09	925	14.50	630	13.59	302	16.00	1450	17.42	2360	16.17	1550	16.00	1450	14.33	550	13.92	397
10	13.09	374	13.84	372	16.09	1500	15.42	1100	14.59	675	13.50	280	16.00	1450	17.34	2310	16.00	1450	16.00	1450	14.42	590	13.92	397
11	13.09	374	13.84	372	16.17	1550	15.67	1250	14.59	675	13.42	264	16.25	1600	17.17	2190	15.67	1250	16.00	1450	14.42	590	13.92	397
12	13.09	374	13.92	397	16.25	1600	15.67	1250	14.50	630	13.42	264	16.67	1850	17.00	2070	16.00	1450	16.00	1450	14.33	550	13.83	369
13	13.00	365	13.92	397	16 25	1600	15.59	1200	14.50	630	13.42	264	17.00	2070	17.00	2070	16.17	1550	15.67	1250	14.33	550	13.83	369
14	13.00	365	13.84	372	16.34	1650	15.50	1150	14.42	590	13.34	248	17.00	2070	17.00	2070	16.33	1650	15.50	1150	14.25	520	13.75	345
15	13.00	365	14.00	425	16.25	1600	15.42	1100	14.42	590	13.25	230	17.00	2070	16.84	1960	16.50	1750	15.50	1150	14.25	520	13.75	345
16	13.00	365	14.17	488	16.17	1550	15.42	1100	14.42	590	13.34	248	17.00	2070	16.50	1750	16.50	1750	15.50	1150	14.25	520	13.67	323
17	13.00	365	14.67	715	16.17	1550	15.42	1100	14.34	555	13.34	248	17.00	2070	16.34	1650	16.50	1750	15.50	1150	14.17	488	13.67	323
18	13.09	374	14.75	755	16.17	1550	15.34	1050	14.34	555	13.42	264	17.00	2070	16.17	1550	16.50	1750	15.33	1050	14.17	488	13.67	323
19	13.17	385	14 67	715	16.09	1500	15.34	1050	14.42	590	13.50	280	17.34	2310	16.00	1450	16.25	1600	15.33	1050	14.17	488	13.67	323
20	13.25	398	14.59	675	16.09	1500	15.25	1000	14.50	630	13.50	280	17.50	2420	15.84	1350	16.33	1650	15.25	1000	14.17	488	13.58	300
21	13.34	413	14.59	675	16.00	1450	15.17	965	14.42	590	13.42	264	17.84	2720	15.84	1350	16.67	1850	15.25	1000	14.17	488	13.58	300
22	13.34	413	14.50	630	16.00	1450	15.09	925	14.34	555	13.50	280	18.00	2860	15.84	1350	16.33	1650	15.25	1000	14.17	488	13.58	300
23	13.34	413	14.50	630	15.92	1400	15.09	925	14.17	488	13.67	322	18.00	2860	15.84	1350	16.33	1650	15.25	1000	14.17	488	13.50	280
24	13.42	430	14.50	630	15.84	1350	15.09	925	14.17	488	13.75	345	18.25	3090	15.84	1350	16.25	1600	15.00	880	14.17	488	13.50	280
25	13.42	430	14.50	630	15.75	1300	15.09	925	14.17	488	13.67	322	18.50	3350	15.67	1250	16.25	1600	14.58	670	14.08	453	13.50	280
26	13.50	450	14.59	675	15.75	1300	15.00	885	14.34	555	13.67	322	18.50	3350	15.67	1250	16.25	1600	15.00	880	14.08	453	13.50	280
27	13.50	450	14.59	675	15.67	1250	15.00	885	14.25	520	14.50	630	18.50	3350	15.50	1150	16.50	1750	15,50	1150	14.08	453	13.50	280
28	13.59	477	14.67	715	15.67	1250	15.00	885	14.17	488	14.84	800	18.67	3540	15.50	1150	16.50	1750	15.50	1150	14.08	453	13.50	280
29	13.59	477	14.84	800	15.84	1350	15.00	885	.....	....	15.50	1150	18.67	3540	15.50	1150	16.25	1600	15.58	1200	14.00	425	13.50	280
30	13.59	477	14.84	800	15.84	1350	14.84	800	.....	....	15.75	1300	18.67	3540	15.67	1250	16.00	1450	15.58	1200	14.00	425	13.50	280
31	13.59	477	.....	....	15.92	1400	14.67	715	.....	....	16.00	1450	.....	....	16.17	1550	.....	.....	15.50	1150	14.00	425	.....	.....

Monthly Discharge of Muskoka River (South Branch) at Tretheway's Falls for 1916-7

Drainage Area, 668 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	477	365	401	.71	.55	.60	.69
November "	800	302	517	1.20	.45	.77	.86
December "	1,650	590	1,283	2.47	.88	1.92	2.21
January (1917)	1,400	715	1,046	2.10	1.07	1.57	1.81
February	715	488	591	1.07	.73	.88	.92
March	1,450	230	441	2.17	.34	.66	.76
April	3,540	1,450	2,319	5.30	2.17	3.47	3.87
May	3,540	1,150	1,995	5.30	1.72	2.99	3.45
June	1,850	1,250	1,562	2.77	1.87	2.34	2.61
July	1,450	670	1,214	2.17	1.00	1.82	2.10
August	630	425	512	.94	.64	.77	.89
September	425	280	346	.64	.42	.52	.58
The year	3,540	230	1,021	5.30	.34	1.53	20.74

Napanee River near Napanee

Location—At Mink's Bridge, three miles from Napanee, near lot 1, concession 1, Township of Camden, County of Addington.

Records Available—Discharge measurements from August, 1915, and gauge readings from September 8, 1915.

Drainage Area—300 square miles.

Gauge—A boxed chain gauge on the right bank of the river 400 feet above the section. Nine feet of standard gauge plates. When the gauge reads zero the elevation of the water is 97.93.

Channel and Control—The channel is curved above the section to within 20 feet of the bridge, and is straight for 300 feet below. The right bank is high, while the left is comparatively low and liable to overflow. The bed of the stream is composed of rocks and gravel, not likely to shift.

Discharge Measurements—Made by wading at low stages and from bridge at high stages.

Winter Flow—Relation of gauge height to discharge is affected by ice.

Regulation—There are several power developments on the upper part of the river, and also lumber dams on tributary waters.

Accuracy—Two daily readings give only fair mean daily gauge heights.

Observer—Mrs. Dan. O'Shaughnessy, Napanee.

Discharge Measurements of Napanee River near Napanee in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Nov. 22	Campbell, L. L.	51	25	1.27	100.95	32	.....
1917							
Feb. 15 "	"	61	28	1.36	101.51	39 (a)	.....
Mar. 8 "	"	61	43	1.49	101.88	65 (a)	.....
Apr. 8 "	"	64	548	4.19	109.19	2,293	.....
" 27 "	"	64	254	3.12	104.43	791	.....
May 17 "	"	64	115	1.59	102.31	183	.....
June 15 "	"	64	123	1.65	102.40	204	.....
Aug. 16 "	Ronald, F.....	58	41	1.10	101.12	46	.....
Oct. 10 "	"	55	28	1.07	100.98	30	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of Napanee River near Napanee for 1916-7

Drainage Area, 300 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	101.30	48	101.03	34	101.22	52	101.38	58	101.63	53	101.97	77	108.45	2380	103.79	535	102.25	178	101.88	125	100.79	18	101.08	38
2	101.38	54	101.09	39	101.22	52	101.26	46	101.80	70	101.97	77	108.66	2470	103.83	550	102.25	178	101.88	125	101.04	35	101.08	38
3	101.30	48	100.97	29	101.13	43	101.38	58	101.76	66	101.92	72	109.70	2900	103.75	525	102.33	191	101.75	109	101.04	35	101.13	43
4	101.22	43	101.05	36	101.13	43	101.38	58	101.38	29	101.68	48	108.62	2450	103.62	486	102.50	220	101.75	109	101.00	31	101.17	47
5	101.22	43	101.05	36	101.18	48	101.38	58	101.76	66	101.97	77	108.45	2380	103.54	462	102.42	206	101.62	93	101.00	31	101.21	51
6	101.22	43	101.26	56	101.32	62	101.38	48	101.68	58	101.92	72	108.58	2430	103.42	425	102.29	184	101.38	68	101.04	35	101.21	51
7	101.22	43	101.38	68	101.32	62	101.38	48	101.59	49	101.92	72	109.20	2690	103.38	415	102.25	178	101.00	31	101.33	63	101.17	47
8	101.13	38	101.34	64	101.32	62	101.68	68	101.80	70	101.97	77	108.37	2350	103.21	372	102.25	178	101.25	55	101.33	63	101.17	47
9	101.13	38	101.22	52	101.32	62	101.72	72	101.84	74	101.97	77	108.12	2240	103.00	320	102.25	178	101.46	76	101.25	55	101.08	38
10	101.22	43	101.22	52	101.22	52	101.68	59	101.80	70	102.01	81	108.20	2270	102.75	268	102.96	311	101.46	76	101.25	55	101.00	31
11	101.22	43	101.22	52	101.34	54	101.68	58	101.63	53	102.09	90	107.83	2120	102.83	284	103.83	550	101.50	80	101.25	55	101.04	35
12	101.22	43	101.13	43	101.30	50	101.55	45	101.80	70	102.26	123	107.41	1940	102.75	268	102.71	260	101.46	76	101.25	55	101.08	38
13	101.22	43	101.22	52	101.30	50	101.80	70	101.72	62	102.18	113	107.33	1910	102.58	235	102.54	228	101.42	72	101.17	47	101.04	35
14	101.22	43	101.42	72	101.22	42	101.63	53	101.63	53	102.26	123	107.08	1800	102.33	191	102.50	220	101.50	80	101.17	47	101.00	31
15	101.22	43	101.26	56	101.22	42	101.76	66	101.72	62	102.13	107	106.83	1700	102.25	178	102.46	213	101.42	72	101.17	47	101.00	31
16	101.30	48	101.09	39	101.22	42	101.63	53	101.84	74	102.22	131	106.00	1340	102.25	178	102.33	191	101.42	72	101.17	47	100.96	28
17	101.30	48	101.05	36	101.18	38	101.63	53	101.80	70	102.59	200	106.13	1390	102.29	184	102.33	191	101.38	68	101.08	38	100.83	20
18	101.30	48	101.22	52	101.18	38	101.68	58	101.72	62	103.09	318	105.88	1290	102.21	172	102.29	184	101.38	68	101.00	31	100.83	20
19	101.30	48	101.22	52	101.13	34	101.63	53	101.76	66	102.92	302	106.00	1340	102.17	166	102.25	178	101.50	80	101.13	43	100.92	25
20	101.30	48	101.24	54	101.13	34	101.55	45	101.72	62	102.88	294	106.17	1410	102.21	172	102.25	178	101.42	72	101.04	35	101.08	38
21	101.30	48	101.18	48	101.13	34	101.68	58	101.72	62	103.05	332	105.79	1260	102.21	172	102.12	158	101.42	72	101.08	38	101.16	46
22	101.34	51	100.97	29	101.13	34	101.84	74	101.63	53	103.76	530	105.46	1120	102.21	172	102.08	152	101.21	51	101.08	38	100.92	25
23	101.47	62	100.97	29	101.13	34	101.72	62	101.72	62	104.63	815	105.21	1020	102.33	191	102.08	152	101.33	63	101.13	43	100.83	20
24	101.47	62	100.97	29	101.13	34	101.72	62	101.80	70	108.68	2480	104.96	930	102.38	199	102.08	152	101.34	64	101.17	47	100.67	14
25	101.42	58	100.97	29	101.05	27	101.59	49	101.63	53	107.97	2180	104.67	830	102.38	199	102.08	152	101.29	59	101.17	47	100.71	15
26	101.30	48	100.88	22	101.01	24	101.68	58	102.09	102	107.38	1930	104.54	785	102.33	191	102.04	147	101.34	64	101.17	47	100.92	25
27	101.22	43	101.26	56	101.05	27	101.55	45	101.92	72	107.92	2160	104.29	700	102.50	220	101.96	136	101.21	51	101.17	47	101.08	38
28	101.30	48	101.22	52	101.01	24	101.92	82	101.97	77	108.30	2320	104.17	660	102.46	213	101.79	114	101.33	63	101.25	55	101.33	63
29	101.38	54	101.22	52	101.38	58	101.54	44	.....	....	108.38	2350	104.18	660	102.46	213	101.83	119	101.33	63	101.21	51	101.58	89
30	101.42	58	101.22	52	101.18	38	101.79	69	.....	....	108.63	2450	104.00	605	102.33	191	101.83	119	101.42	72	101.04	35	101.33	63
31	101.38	54	.....	.....	101.22	42	101.83	73	.....	....	108.63	2450	.....	....	102.29	184	.....	....	101.33	63	101.04	35	.....	....

Monthly Discharge of Napanee River near Napanee for 1916-7

Drainage Area, 300 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	62	38	48	.21	.13	.16	.18
November "	72	22	46	.24	.07	.15	.17
December "	62	24	43	.21	.08	.15	.17
January (1917)	82	44	58	.27	.15	.19	.22
February	102	29	64	.34	.10	.21	.22
March.....	2,480	48	727	8.27	.16	2.42	2.79
April.....	2,900	605	1,646	9.67	2.02	5.49	6.12
May.....	550	166	275	1.83	.55	.92	1.06
June	550	114	193	1.83	.38	.64	.71
July.....	125	31	74	.42	.10	.25	.29
August	63	18	44	.21	.06	.15	.17
September.....	89	14	38	.30	.05	.13	.15
The year	2,900	14	271	9.67	.05	.90	12.25

Petawawa River near Petawawa

Location—About 1½ miles southwest of Petawawa station above C.P.R. bridge, near lot 15, concession 7, Township of Petawawa, County of Renfrew.

Records Available—Discharge measurements from October, 1915, and daily gauge heights from November 5, 1915.

Drainage Area—1,572 square miles.

Gauge—Temporary mark used from December 15, 1915, to February 29, 1916, to obtain water elevations afterwards reduced to same datum as permanent gauge, screwed to plank, bolted to large rock in river, back of Rantzs' house, 1,000 feet above the station, and 200 feet above the head of the rapids. This gauge has been used for gauge readings since March 1, 1916.

Channel and Control—The controlling section is a few hundred yards above the metering section. The river is straight for a few hundred feet each side of the section, but is crooked and fast for two miles below the section. The soundings for depth are taken for each metering as the water is fast and the river bed of stones may change slightly between meterings, and the depths do not change the same as the gauge readings.

Discharge Measurements—The discharge measurements for normal and low flows, summer and winter, are made by wading in fast water near the end of the straight stretch in the river downstream from the gauge. At high water measurements are made from the road bridge leading to Petawawa Military Camp.

Winter Flow—The control here is at fast water and only slightly affected by ice.

Accuracy—Gauge readings twice daily give good mean daily gauge height as the fluctuation at the gauge is slow.

Observer—Elsa Rantz, Petawawa.

Discharge Measurements of Petawawa River near Petawawa in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 28....	Campbell, L. L..	197	327	3.62	102.33	1,186	.....
Dec. 14....	"	206	362	3.68	102.42	1,333	.....
1917							
Mar. 14....	"	155	216	3.12	101.75	679 (a)	.....
May 3....	"	163	1,243	7.43	105.19	9,236 (b)	.....
June 6....	"	163	770	4.23	103.42	3,256 (b)	.....
July 20....	Ronald, F	163	1,212	2.79	103.75	3,388 (b)	.....
Sept. 12....	"	163	279	2.88	101.92	797 (c)	.....
" 12....	"	196	252	2.92	101.92	736	.....
Oct. 17....	"	155	182	2.37	101.56	433	.....

(a) Ice on lake above section and at gauge.
(b) Reading taken at highway bridge. Surface velocities observed and co-efficient applied.
(c) Reading taken at highway bridge.

Daily Gauge Height and Discharge of Petawawa River near Petawawa for 1916-7

Drainage Area, 1,572 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	101.54	585	102.38	1240	102.17	1010	102.33	1180	102.33	1180	101.92	760	102.38	1240	105.08	8530	103.54	2970	102.92	1920	103.42	2740	102.42	1280
2	101.50	560	102.42	1280	102.25	1100	102.38	1240	102.29	1140	101.88	720	102.50	1380	105.17	9070	103.50	2890	102.92	1920	103.37	2650	102.33	1180
3	101.50	560	102.42	1280	102.33	1180	102.42	1280	102.25	1100	101.83	675	102.88	1860	105.21	9320	103.50	2890	102.88	1860	103.25	2440	102.33	1180
4	101.50	560	102.46	1330	102.33	1180	102.42	1280	102.25	1100	101.83	675	103.17	2300	105.21	9320	103.46	2810	102.83	1790	103.17	2300	102.25	1100
5	101.50	560	102.50	1380	102.33	1180	102.42	1280	102.25	1100	101.83	675	103.38	2660	105.08	8530	103.50	2890	102.83	1790	103.13	2240	102.25	1100
6	101.50	560	102.46	1330	102.33	1180	102.42	1280	102.25	1100	101.83	675	103.50	2890	105.08	8530	103.42	2740	102.83	1790	103.08	2160	102.17	1010
7	101.50	560	102.50	1380	102.33	1180	102.42	1280	102.25	1100	101.83	675	103.50	2890	104.88	7430	103.42	2740	102.67	1580	103.04	2100	102.17	1010
8	101.50	560	102.50	1380	102.33	1180	102.42	1280	102.25	1100	101.79	640	103.50	2890	104.71	6600	103.42	2740	102.21	1050	103.29	2500	102.17	1010
9	101.50	560	102.50	1380	102.38	1240	102.42	1280	102.21	1050	101.75	605	103.42	2740	104.62	6200	103.42	2740	102.21	1050	103.75	3420	102.08	920
10	101.50	560	102.42	1280	102.42	1280	102.42	1280	102.17	1010	101.75	605	103.29	2500	104.50	5690	103.42	2740	102.67	1580	103.67	3240	102.00	840
11	101.50	560	102.42	1280	102.38	1240	102.42	1280	102.17	1010	101.67	535	103.13	2240	104.46	5530	103.33	2570	103.12	2220	103.58	3050	102.00	840
12	101.50	560	102.42	1280	102.33	1180	102.42	1280	102.17	1010	101.67	535	103.08	2160	104.33	5060	103.33	2570	103.25	2440	103.54	2970	101.92	760
13	101.50	560	102.42	1280	102.33	1180	102.42	1280	102.08	920	101.75	605	103.00	2040	104.25	4790	103.33	2570	103.38	2660	103.50	2890	101.83	675
14	101.50	560	102.42	1280	102.38	1240	102.42	1280	102.08	920	101.75	605	102.96	1980	104.17	4540	103.33	2570	103.46	2810	103.17	2300	101.75	605
15	101.50	560	102.38	1240	102.42	1280	102.42	1280	102.08	920	101.75	605	102.92	1920	104.08	4270	103.25	2440	103.50	2890	102.75	1690	101.75	605
16	101.50	560	102.33	1180	102.42	1280	102.42	1280	102.08	920	101.75	605	102.92	1920	104.00	4050	103.25	2440	103.46	2810	102.75	1690	101.67	535
17	101.50	560	102.33	1180	102.42	1280	102.42	1280	102.08	920	101.67	535	102.92	1920	103.92	3830	103.25	2440	103.42	2740	102.83	1790	101.67	535
18	101.50	560	102.33	1180	102.42	1280	102.42	1280	102.08	920	101.67	535	102.96	1980	103.83	3600	103.25	2440	103.54	2970	102.83	1790	101.58	454
19	101.62	640	102.33	1180	102.42	1280	102.42	1280	102.08	920	101.67	535	103.21	2370	103.79	3510	103.17	2300	103.67	3240	102.83	1790	101.58	454
20	101.67	675	102.33	1180	102.42	1280	102.42	1280	102.04	880	101.67	535	103.50	2890	103.75	3420	103.25	2440	103.75	3420	102.83	1790	101.54	422
21	101.67	675	102.33	1180	102.42	1280	102.42	1230	102.00	840	101.62	488	103.92	3830	103.67	3240	103.17	2300	103.75	3420	102.75	1690	101.50	390
22	101.83	790	102.25	1100	102.42	1280	102.33	1180	102.00	840	101.58	454	104.21	4660	113.58	3050	103.13	2240	103.71	3320	102.75	1690	101.50	390
23	101.92	860	102.17	1010	102.42	1280	102.33	1180	102.00	840	101.58	454	104.46	5530	103.58	3050	103.08	2160	103.83	3600	102.67	1580	101.50	390
24	102.25	1050	102.17	1010	102.42	1280	102.33	1180	102.00	840	101.62	488	104.50	5690	103.67	3240	103.08	2160	103.92	3830	102.75	1680	101.50	390
25	102.25	1050	102.17	1010	102.42	1280	102.33	1180	101.96	800	101.67	535	104.50	5690	103.75	3420	102.54	1430	103.83	3600	102.67	1580	101.50	390
26	102.25	1050	102.17	1010	102.42	1280	102.33	1180	101.92	760	101.75	605	104.50	5690	103.75	3420	103.00	2040	103.75	3420	102.58	1480	101.50	390
27	102.25	1050	102.17	1010	102.38	1240	102.33	1180	101.92	760	101.83	675	104.58	6030	103.75	3420	102.92	1920	103.67	3240	102.58	1480	101.50	390
28	102.33	1230	102.17	1010	102.33	1180	102.33	1180	101.92	760	102.06	900	104.71	6600	103.75	3420	102.88	1860	103.58	3050	102.58	1480	101.50	390
29	102.33	1230	102.17	1010	102.33	1180	102.33	1180	.....	....	102.21	1050	104.96	7850	103.67	3240	102.88	1860	103.58	3050	102.50	1380	101.50	390
30	102.33	1230	102.17	1010	102.33	1180	102.33	1180	.....	....	102.25	1100	105.00	8070	103.67	3240	102.92	1920	103.58	3050	102.50	1380	101.58	454
31	102.33	1230	.....	....	102.33	1180	102.33	1180	.....	....	102.29	1140	.....	....	103.58	3050	.....	....	103.46	2810	102.50	1380	.....	....

Monthly Discharge of Petawawa River near Petawawa for 1916-7

Drainage Area, 1,572 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)..	1,230	560	738	.78	.36	.46	.53
November " ..	1,380	1,010	1.196	.88	.64	.76	.85
December " ..	1,280	1,010	1,222	.81	.64	.78	.90
January (1917)...	1.280	1,180	1,243	.81	.75	.79	.91
February	1.180	760	956	.75	.48	.61	.64
March.....	1.140	454	652	.73	.29	.41	.47
April.....	8,070	1,240	3,480	5.13	.79	2.21	2.47
May.....	9,320	3,050	5,084	5.93	1.94	3.23	3.72
June.....	2,970	1,430	2,427	1.89	.91	1.54	1.72
July.....	3,830	1,050	2,610	2.44	.67	1.66	1.91
August	3,420	1,380	2,075	2.18	.88	1.32	1.52
September	1,280	390	683	.81	.25	.43	.48
The year	9,320	390	1,870	5.93	.25	1.19	16.15

Seguin River near Parry Sound

Location—700 feet below Mountain Dam, two miles above the highway bridge, and about seven miles above the Town of Parry Sound, Township of McDougall, Parry Sound District.

Records Available—Discharge measurements from June, 1914. Daily gauge heights from August 1, 1915, to December 31, 1917.

Drainage Area—380 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, firmly wedged in rock on left shore 200 feet below dam. Zero of gauge (elev. 8.00 feet) is referred to a bench mark (elev. 15.00 feet) painted on a large rock directly across stream from gauge.

Channel—Both banks are high, wooded and not liable to overflow. The bed of the stream is composed of rocks and boulders, slightly shifting. The current is swift, and flows through one channel at all stages.

Discharge Measurements—Made by wading with a Price current meter. During high water, measurements are made at the highway bridge at the head of Mill Lake, 2 miles below wading section.

Winter Flow—Ice forms along the banks of river at the station during the winter months. The river is entirely covered with ice for a considerable distance above and below station.

Regulation—The dam 700 feet above gauging station causes fluctuation of river at gauge.

Accuracy—Estimates of flow at this station cannot be considered better than fair.

Observer—Percy Burnside, Parry Sound.

Discharge Measurements of Seguin River near Parry Sound in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 11	Murray, W. S.	91	125	1.52	10.66	190	.....
1917							
Jan. 18	"	63	450	.64	11.91	291(a)	.....
Feb. 22	"	63	247	.73	10.58	181(a)	.....
Mar. 29	"	63	317	3.54	11.33	1,124(b)	.....
" 31	"	63	450	3.28	12.50	1.475(b)	.....
April 5	"	63	569	6.18	14.00	3,517(c)	.....
" 5	"	63	406	.63	22.70	257(d)	.....
" 6	"	63	575	6.28	14.10	3,615(c)	.....
" 6	"	63	393	.52	22.50	206(d)	.....
May 8	"	63	519	1.43	11.83	742(c)	.....
June 20	Campbell, L. L.	63	576	1.08	11.58	620(c)	.....
July 24	Ronald, F.	63	550	1.31	11.71	722(c)	.....
Aug. 23	"	60	67	2.41	10.71	162	.....
Sept. 23	"	51	52	1.34	10.14	71	.....

(a) Reading taken at highway bridge. Ice measurement.
(b) Reading not reliable owing to operation of Mill Lake dam below section.
(c) Reading taken at highway bridge.
(d) Readings taken at Portage Creek which enters Seguin River between gauge and high-water section.

Daily Gauge Height and Discharge of Seguin River near Parry Sound for 1916-7

Drainage Area, 380 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	10.50	170	12.08	980	12.16	965	12.16	410	11.25	110	10.50	58	12.83	1780	13.16	2170	11.42	492	11.50	540	11.33	445	10.42	124
2	10.50	170	12.00	910	12.16	965	12.16	410	11.25	110	10.50	65	13.00	1980	13.16	2170	11.33	445	11.50	540	11.25	405	10.42	124
3	10.41	156	12.00	910	12.25	965	12.16	410	11.16	92	10.50	65	13.00	1980	12.00	910	11.42	492	11.50	540	11.17	365	10.42	124
4	10.41	156	12.00	910	12.33	935	12.08	370	11.16	92	10.50	65	13.83	3060	12.08	980	11.42	492	11.50	540	10.00	50	10.33	106
5	10.33	145	12.00	910	12.41	920	12.08	370	11.16	92	10.50	65	14.00	3280	12.25	1150	11.50	540	11.50	540	10.08	62	10.33	106
6	10.33	145	12.00	910	12.50	910	12.08	370	11.16	92	10.50	80	14.08	3390	12.25	1150	11.50	540	11.42	492	10.17	75	10.33	106
7	10.33	145	12.08	980	12.66	965	12.08	370	11.08	77	10.41	80	14.08	3390	12.16	1060	11.50	540	11.42	492	10.17	75	10.33	106
8	10.33	145	12.08	980	12.75	955	12.08	370	11.08	77	10.41	80	14.25	3620	11.83	775	11.50	540	11.42	492	10.25	90	10.33	106
9	10.33	145	12.08	980	12.91	1010	12.08	370	11.00	65	10.33	80	14.25	3620	11.83	775	11.50	540	11.42	492	10.33	106	10.42	124
10	10.33	145	12.16	1060	12.75	790	12.00	330	11.00	65	10.33	80	14.25	3620	11.83	775	11.50	540	11.42	492	10.33	106	10.42	124
11	10.41	156	12.16	1060	12.75	790	12.00	330	11.00	65	10.33	65	14.25	3620	11.83	775	11.50	540	11.33	445	10.33	106	10.50	140
12	10.41	156	12.16	1060	12.75	790	12.00	330	11.00	65	10.25	65	14.08	3390	11.75	715	11.42	492	11.33	445	10.75	205	10.58	160
13	10.50	170	12.16	1060	12.66	720	12.00	330	11.08	77	10.25	65	14.08	3390	11.75	715	11.42	492	11.25	405	11.00	290	10.58	160
14	10.54	178	12.16	1060	12.66	720	12.00	330	11.08	77	10.25	65	14.00	3280	11.66	650	11.42	492	11.25	405	10.75	205	10.67	182
15	10.50	170	12.16	1060	12.66	720	12.00	330	11.08	77	10.16	65	14.00	3280	11.66	650	11.42	492	11.25	405	10.67	182	10.75	205
16	10.58	186	12.16	1060	12.66	720	12.00	330	11.08	77	10.08	50	14.00	3280	11.58	590	11.42	492	11.33	445	10.67	182	10.75	205
17	10.58	186	12.16	1060	12.66	720	12.00	330	11.08	77	10.00	40	13.83	3060	11.58	590	11.50	540	11.33	445	10.67	182	10.67	182
18	10.66	208	12.25	1150	12.58	665	11.91	294	11.00	65	10.00	40	13.83	3060	11.50	540	11.58	590	11.33	445	10.67	182	10.67	182
19	10.66	208	12.16	1060	12.58	665	11.91	294	10.91	52	10.00	40	13.75	2950	11.50	540	11.58	590	11.42	492	10.67	182	10.58	160
20	10.75	235	12.08	980	12.50	610	11.91	294	10.75	35	10.00	40	13.66	2830	11.50	540	11.58	590	11.42	492	10.67	182	10.58	160
21	10.83	260	12.08	895	12.41	545	11.83	265	10.66	36	10.00	40	13.66	2830	11.41	486	11.67	660	11.42	492	10.67	182	10.50	140
22	11.00	325	12.00	830	12.33	500	11.83	265	10.58	38	10.00	40	13.66	2830	11.33	445	11.67	660	11.42	492	10.67	182	10.50	140
23	11.16	400	12.00	830	12.25	455	11.75	238	10.58	38	10.08	48	13.66	2830	11.33	445	11.67	660	11.50	540	10.67	182	10.25	90
24	11.41	540	11.91	760	12.25	455	11.75	238	10.58	38	10.08	48	13.66	2830	11.25	405	11.67	660	11.67	660	10.58	160	10.17	75
25	11.58	655	11.91	760	12.25	455	11.66	208	10.58	48	10.08	48	13.58	2720	11.25	405	11.67	660	11.67	660	10.58	160	10.17	75
26	11.75	785	11.91	760	12.16	410	11.58	185	10.58	48	10.16	59	13.58	2720	11.25	405	11.67	660	11.67	660	10.58	160	10.08	62
27	11.91	930	12.00	830	12.16	410	11.50	165	10.58	62	10.16	74	13.58	2720	11.25	405	11.58	590	11.67	660	10.50	140	10.08	62
28	12.08	1090	12.00	830	12.16	410	11.50	165	10.58	62	10.83	230	13.58	2720	11.33	445	11.58	590	11.58	590	10.50	140	10.00	50
29	12.08	1090	12.08	895	12.16	410	11.50	165	.....	....	11.33	445	13.50	2620	11.33	445	11.50	540	11.50	540	10.42	124	10.00	50
30	12.08	1090	12.16	965	12.16	410	11.41	142	.....	....	11.83	775	13.33	2390	11.33	445	11.50	540	11.42	492	10.42	124	9.83	33
31	12.08	1090	.....	....	12.16	410	11.33	126	.....	....	12.50	1410	.....	....	11.41	486	.....	....	11.42	492	10.42	124	.....	....

Monthly Discharge of Seguin River near Parry Sound for 1916-7

Drainage Area, 380 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	1,090	156	375	2.87	.41	.99	1.14
November "	1,150	760	950	3.03	2.00	2.50	2.79
December "	1,010	410	689	2.66	1.08	1.81	2.09
January (1917)	410	126	295	1.08	.33	.78	.90
February	110	35	68	.29	.09	.18	.19
March.....	1,410	40	144	3.71	.11	.38	.44
April	3,620	1,780	2,969	9.53	4.68	7.81	8.71
May	2,170	405	743	5.71	1.07	1.96	2.26
June	660	445	556	1.74	1.17	1.46	1.63
July.....	660	405	512	1.74	1.07	1.35	1.56
August.....	445	50	173	1.17	.13	.46	.53
September.....	205	33	122	.54	.09	.32	.36
The year	3,620	33	632	9.53	.09	1.66	22.57

Tay River near Glen Tay

Location—Near lots 20 and 21, concession 11, Township of Bathurst, County of Lanark. At the highway bridge north of the Village of Glen Tay, and east of the auxiliary plant of the Canadian Electric & Water Company, Limited, of Perth and Ottawa.

Records Available—Discharge measurements July, 1915, and gauge readings from July 10, 1915.

Drainage Area—204 square miles.

Gauge—Vertical steel staff 0 to 3 feet fastened to the pier of bridge one foot above section.

Channel and Control—The channel is straight from the dam 150 feet above and straight for 250 feet below the section. The banks are high, and not liable to overflow. The bed of the river is composed of shale and stones, not shifting. The flow is confined between the bridge abutments at all stages. The control is a short distance below the section, and the flood flow is likely to disturb it to some extent.

Discharge Measurements—Made by wading at ordinary stages, and from the bridge at very high stages.

Winter Flow—Channel at section likely free from ice during winter, but will be affected by ice formation below the section.

Regulation—The river is dammed immediately above the section and one mile further up, for power purposes, and the Department of Railways and Canals operate a dam at the foot of Bob's Lake for regulating canal purposes.

Accuracy—The open-water rating will be very good.

Observer—Paul Griffin, Manion P.O.

Discharge Measurements of Tay River near Glen Tay in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 12....	Campbell, L. L..	35	32	2.27	94.05	72	.....
Dec. 18....	" ..	29	27	1.26	93.84	33	.....
1917							
March 6....	" ..	36	28	2.22	93.90	62 (a)	.....
April 2....	" ..	48	117	4.61	95.38	537	.....
" 25....	" ..	41	62	4.16	94.44	256	.....
May 15....	Hatton	41	58	3.79	94.38	218	.....
June 16....	"	40	51	3.31	94.30	168	.....
Aug. 17....	Ronald, F.....	39	65	4.76	94.25	317	.....
Oct. 3....	"	36	29	2.15	93.96	62	.....

(a) Section partly ice covered.

Daily Gauge Height and Discharge of Tay River near Glen Tay for 1916-7

Drainage Area, 204 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	94.46	188	94.13	106	93.88	48	93.98	66	93.80	38	94.09	68	95.32	520	94.44	214	94.11	98	94.17	120	94.34	179	94.23	140
2	94.05	71	93.88	48	93.88	48	93.98	66	93.80	38	94.09	68	95.34	530	94.42	207	94.09	92	94.15	112	94.38	193	94.24	144
3	94.09	79	94.13	106	93.88	48	93.94	59	93.80	38	93.96	46	95.44	565	94.28	158	94.05	82	94.13	106	94.36	186	94.07	88
4	94.09	79	93.88	48	93.96	62	93.94	59	93.80	38	93.92	41	95.23	490	94.46	221	94.03	78	94.13	106	94.36	186	94.07	88
5	94.05	71	94.13	106	93.92	55	93.94	59	93.80	38	94.07	64	94.94	389	94.44	214	94.21	134	94.09	92	94.49	232	94.07	88
6	94.25	119	93.88	48	93.88	48	93.98	66	93.80	38	94.07	64	94.82	347	94.17	120	94.21	134	94.07	88	94.32	172	94.07	88
7	94.05	71	93.88	48	93.88	48	94.17	120	93.80	38	94.07	64	95.07	434	94.21	134	94.25	148	94.05	82	94.26	151	94.28	158
8	94.05	71	93.88	48	93.88	48	93.94	59	93.82	41	94.07	64	94.96	396	94.07	88	94.19	126	94.07	88	94.28	158	94.13	106
9	94.05	71	93.92	55	93.88	48	93.96	62	93.86	46	94.13	78	94.84	354	94.07	88	94.17	120	94.06	85	94.44	214	94.11	98
10	94.05	71	94.21	134	93.88	48	93.98	66	93.86	46	94.03	57	94.61	274	94.07	88	93.96	62	94.06	85	94.36	186	94.30	165
11	94.05	71	93.88	48	93.84	43	93.96	62	94.19	126	94.07	64	94.59	266	94.07	88	94.07	88	94.06	85	94.38	193	94.30	165
12	94.05	71	93.88	48	93.88	48	93.92	55	93.92	55	94.07	64	94.59	266	94.07	88	94.27	154	94.11	98	94.54	249	94.11	98
13	94.05	71	93.88	48	93.88	48	93.92	55	93.92	55	94.05	60	94.53	246	94.09	92	94.27	154	94.18	123	94.30	165	94.13	106
14	94.05	71	93.88	48	93.84	43	93.91	53	94.07	88	94.03	57	94.55	252	94.09	92	94.50	235	94.19	126	94.30	165	94.38	193
15	94.01	63	93.88	48	93.80	38	93.91	53	93.96	62	94.11	72	94.51	238	94.09	92	94.34	179	94.19	126	94.28	158	94.17	120
16	94.01	63	94.17	120	93.80	38	93.91	53	93.98	66	94.21	98	94.48	228	94.07	88	94.34	179	94.19	126	94.26	151	94.13	106
17	93.96	56	94.17	120	93.80	38	93.88	48	93.96	62	94.23	106	94.42	207	94.05	82	94.32	172	94.38	193	94.23	140	94.11	98
18	94.01	63	93.88	48	93.82	41	93.88	48	94.11	98	94.25	112	94.42	207	94.05	82	94.32	172	94.19	126	94.21	134	94.13	106
19	93.96	56	93.88	48	93.84	43	93.88	48	94.03	78	94.17	88	94.40	200	94.05	82	94.32	172	94.21	134	94.28	158	94.11	98
20	94.01	63	94.13	106	93.84	43	93.88	48	94.09	92	93.90	38	94.19	126	94.03	78	94.21	134	94.23	140	94.26	151	94.28	158
21	94.01	63	93.88	48	93.86	46	93.86	46	94.44	214	94.01	53	94.48	228	94.07	88	94.23	140	94.26	151	94.38	193	94.11	98
22	94.05	71	94.13	106	93.88	48	93.84	43	94.13	106	93.96	46	94.53	246	94.23	140	94.21	134	94.28	158	94.19	126	94.28	158
23	94.01	63	94.13	106	93.86	46	93.84	43	94.07	88	93.98	48	94.34	179	94.09	92	94.17	120	94.26	151	94.38	193	94.07	88
24	93.96	56	93.88	48	93.86	46	93.84	43	94.01	53	94.28	123	94.21	134	94.21	134	94.17	120	94.17	120	94.31	168	94.23	140
25	93.96	56	93.92	55	93.88	48	93.84	43	94.15	82	95.23	490	94.40	200	94.44	214	94.15	112	94.23	140	94.30	165	94.21	134
26	93.96	56	94.17	120	93.88	48	93.84	43	94.11	72	97.30	1220	94.38	193	94.15	112	94.13	106	94.19	126	94.42	207	94.23	140
27	93.92	51	93.88	48	93.94	59	93.84	43	94.05	60	97.88	1420	94.34	179	94.17	120	94.13	106	94.21	134	94.07	88	94.21	134
28	93.92	51	93.88	48	93.94	59	93.82	41	94.07	64	97.71	1360	94.30	165	94.13	106	94.13	106	94.29	162	94.05	82	94.01	72
29	94.13	88	93.88	48	94.01	72	93.80	38	.....	....	97.09	1140	94.30	165	94.17	120	94.15	112	94.34	179	94.05	82	94.01	72
30	94.17	98	93.88	48	93.98	66	93.80	38	.....	....	96.34	880	94.26	151	94.11	98	94.13	106	94.38	193	94.09	92	94.19	126
31	94.13	88	.....	....	93.96	62	93.80	38	.....	....	95.63	630	.....	....	94.11	98	.....	....	94.38	193	94.23	140	.....	....

Monthly Discharge of Tay River near Glen Tay for 1916-7

Drainage Area, 204 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	188	51	74	.92	.25	.36	.42
November "	134	48	70	.66	.24	.34	.38
December "	66	38	49	.32	.19	.24	.28
January (1917)	120	38	54	.59	.19	.26	.30
February	214	38	69	1.05	.19	.34	.35
March	1,420	41	283	6.96	.20	1.39	1.60
April	565	126	279	2.77	.62	1.37	1.53
May	221	78	120	1.08	.38	.59	.68
June	235	62	129	1.15	.30	.63	.70
July	193	82	127	.95	.40	.62	.71
August	249	82	163	1.22	.40	.80	.92
September	165	72	119	.81	.35	.58	.65
The year	1,420	38	128	6.96	.19	.63	8.51

York River near Bancroft

Location—At the highway bridge one and a half miles below Bancroft, near lots 53 and 54, west of the Hastings Road, Township of Faraday, County of Hastings.

Records Available—Discharge measurements from July, 1915. Daily gauge heights from July 16, 1915.

Drainage Area—374 square miles.

Gauge—Vertical standard gauge plates 0 to 6 ft. secured on the upstream face of the right bridge pier near the west corner.

Channel and Control—The channel is straight for 400 feet above and 250 feet below the section. The banks are high and sandy, not liable to overflow. The bed is composed of gravel. Flow takes place in two channels under the bridge at high stages, and in one channel at lower stages.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—Ice will materially affect the open-water relation of gauge heights to discharge, and frazil ice at times makes meterings difficult.

Regulation—The dam at Bancroft gives very small storage, and the plants there do not use the entire flow. On account of the electrical plant working at night, and the other mills during the day, daily gauge readings give fairly accurate figures for the mean daily stage. Some of the tributary streams are controlled by dams for storage and driving purposes for the lumber industry.

Accuracy—As the river bed is composed of gravel, slight movement no doubt takes place without changing the general profile and section.

Observer—J. L. Churcher, Bancroft.

Discharge Measurements of York River near Bancroft in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 11....	Campbell, L. L..	56	184	.73	100.83	135	.....
Nov. 20....	" ..	62	227	1.18	101.50	268 (a)	.....
Dec. 20....	" ..	56	388	1.59	104.60	618 (b)	.....
1917							
Mar. 10....	" ..	56	193	.81	102.50	157 (c)	.....
April 4....	Hatton	68	429	2.28	104.52	981	.....
May 18....	"	70	260	1.37	101.92	356	.....
June 13....	"	68	256	1.46	102.04	375	.....
Oct. 3....	Ronald, F.....	63	192	,76	100.92	145	.....

(a) Ice at sides of river above section.
(b) Ice on control.
(c) Ice measurement.

Daily Gauge Height and Discharge of York River near Bancroft for 1916-7

Drainage Area, 374 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	100.67	113	101.04	179	102.42	324	103.71	419	102.58	190	102.56	182	102.92	570	106.13	1480	102.89	565	101.42	252	101.12	194	101.00	171
2	100.79	133	101.06	182	102.42	318	103.48	364	102.56	190	102.35	149	103.21	640	106.15	1490	102.67	510	101.42	252	101.00	171	100.97	166
3	100.88	149	101.10	190	102.32	282	103.33	308	102.57	190	102.40	153	103.83	805	106.15	1490	102.25	420	101.37	242	100.96	164	101.00	171
4	100.88	149	101.08	186	102.40	268	103.17	308	102.58	196	102.35	146	104.30	945	106.13	1480	102.00	368	101.38	244	101.16	201	101.00	171
5	100.92	157	101.06	182	102.46	260	103.19	308	102.57	194	102.38	155	104.42	980	106.06	1460	102.20	409	101.28	224	101.04	179	101.02	175
6	100.92	157	101.06	182	102.67	298	103.08	280	102.56	184	102.46	164	104.42	980	105.97	1430	102.45	462	101.27	222	101.15	200	101.02	175
7	100.88	149	101.08	186	102.67	278	103.08	280	102.56	184	102.46	167	104.44	980	105.85	1400	102.50	472	101.30	228	101.21	211	101.00	171
8	100.88	149	101.08	186	102 58	232	102.88	248	102.50	171	102.46	167	104.35	960	105.08	1170	102.71	520	101.33	234	101.13	196	101.00	171
9	100.96	164	101.11	192	102.71	258	102.96	260	102.50	171	102.52	190	104.35	960	104.75	1080	102.83	550	101.37	242	101.27	222	101.00	171
10	100.94	160	101.12	194	102.88	288	102.79	232	102.49	171	102.50	160	104.35	960	103.04	600	102.62	497	101.38	244	101.45	258	100.98	167
11	100.92	157	101.12	194	102.83	278	102.70	215	102.42	144	102.40	158	104.35	960	102.75	530	102.79	540	101.25	219	101.13	196	100.99	169
12	100.92	157	101.12	194	102.88	288	102.79	236	102.50	157	102.62	181	104.42	980	103.25	650	102.12	392	101.46	260	101.35	238	100.96	164
13	100.92	157	101.12	194	103.42	403	102.82	238	102.46	171	102.67	224	104.44	980	103.26	650	102.04	376	101.25	219	101.25	219	100.96	164
14	100.92	157	101.12	194	103.67	515	102.83	234	102.46	171	102.67	220	104.46	990	103.15	620	102.07	382	101.19	207	101.10	190	100.98	167
15	100.91	155	101.05	181	103.96	515	102.84	234	102.42	162	102.67	238	104.46	990	102.87	560	102.12	392	101.25	219	101.06	182	100.94	160
16	100.92	157	101.08	186	104.06	540	102.80	219	102.44	166	102.67	280	104.46	990	102.83	550	101.75	318	101.37	242	101.13	196	100.90	153
17	100.92	157	101.00	171	104.50	595	102.75	219	102.38	153	102.58	288	104.46	990	102.17	403	101.71	310	101.25	219	101.17	203	101 04	179
18	100.92	157	101.00	171	104.50	645	102.75	219	102.33	144	102.58	308	104.58	1020	102.04	376	101.66	300	101.20	209	101.08	186	100.94	160
19	101.04	179	101.04	179	104.42	615	102.67	209	102.29	139	102.67	334	104.58	1020	102.01	370	101.67	302	101.25	219	101.04	179	100.96	164
20	101.09	188	101.50	268	104.42	615	102.67	209	102.46	162	102.62	348	105.01	1150	102.00	368	101.50	268	101.32	232	101.08	186	100.98	167
21	101.19	207	101.60	288	104.52	605	102.67	209	102.38	157	102.62	368	105.59	1320	101.99	366	101.56	280	101.29	226	101.15	200	101.06	182
22	101.12	190	101.62	292	104.46	590	102.67	209	102.29	153	102.54	380	105.81	1380	102.07	382	101.57	282	101.10	190	101.10	190	101.06	182
23	101.08	186	101.63	294	104.66	640	102.68	209	102.46	171	102.62	409	105.94	1420	102.38	447	101.56	280	101.08	186	101.06	182	100.98	167
24	101.06	182	101.65	298	104.65	630	102.67	209	102.52	177	102.71	430	105.92	1420	102.45	462	101.56	280	101.17	203	101.15	200	100.96	164
25	101.04	179	101.66	300	104.73	645	102.63	205	102.40	157	102.71	489	106.29	1530	102.58	489	101.57	282	101.15	200	101.17	203	101.00	171
26	101.04	179	102.00	298	105.00	710	102.64	203	102.58	190	103.17	590	106.33	1540	102.29	428	101.42	252	101.15	200	101.04	179	101.02	175
27	101.04	179	102.29	328	104.73	650	102.61	196	102.58	190	104.42	860	106.33	1540	103.82	800	101.44	256	101.21	211	101.06	182	100.90	153
28	101.04	179	102.33	334	104.38	565	102.58	190	102.56	190	103.66	760	106.33	1540	103.70	770	101.44	256	101.00	171	101.04	179	100.90	153
29	101.04	179	102.33	322	104.22	530	102.63	200	.....	.....	103.30	660	106.21	1500	103.58	735	101.45	258	101.25	219	101.04	179	100.88	149
30	101.04	179	102.42	324	104.00	476	102.60	190	.....	.....	103.12	620	106.17	1490	103.31	665	101.43	254	101.12	194	101.02	175	100.92	157
31	101.04	179	.....	.....	103.88	376	102.58	190	.....	.....	102.67	510	.....	....	102.83	550	.....	.....	101.12	194	100.98	167	.....	....

Monthly Discharge of York River near Bancroft for 1916-7

Drainage Area, 374 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per square mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October... (1916)	207	113	165	.56	.30	.44	.51
November "	324	171	229	.87	.46	.61	.68
December "	710	232	459	1.90	.62	1.23	1.42
January ..(1917)	419	190	240	1.12	.51	.64	.74
February	196	139	171	.52	.37	.46	.48
March.....	860	146	332	2.30	.39	.89	1.03
April	1,540	570	1,118	4.12	1.52	2.99	3.34
May.....	1,490	366	782	3.98	.98	2.09	2.41
June	565	252	368	1.51	.68	.98	1.09
July.....	260	171	220	.70	.46	.59	.68
August	258	164	194	.69	.44	.52	.60
September.....	182	149	167	.49	.40	.45	.50
The year	1,540	113	371	4.12	.30	.99	13.47

Regular Stations

NORTHERN ONTARIO DISTRICT

River	Location	Drainage Area Sq. Miles	Township	District
aux Sables	near Massey	524	Salter	Sudbury
Blanche	near Englehart	430	Evanturel	Temiskaming
Frederickhouse	at Frederickhouse	1,260	Clute	"
Kagawong	at Kagawong	94	Allan	Manitoulin Island
Mattagami	at Smooth Rock Falls	3,970	Kendry	Temiskaming
Mississagi	at Iron Bridge	3,565	Gladstone	Algoma
South	near Powassan	294	Himsworth	Parry Sound
Spanish	near Webbwood	4,340	Hallam	Sudbury
Sturgeon	near Smoky Falls	2,570	Field	Nipissing
Vermilion	near Whitefish	1,580	Graham	Sudbury
Wanapitei	at McVitties	1,190	Secord	"

aux Sables River at Massey

Location—About 800 feet upstream from C.P. Ry. bridge and ¼ mile northeast of railway station, in the Village of Massey, Township of Salter, Sudbury District.

Records Available—Discharge measurements from August, 1914. Daily gauge heights from June 10, 1915.

Drainage Area—524 square miles.

Gauge—A chain gauge has been established here reading zero with water at an elevation of 16.00 referred to a B.M. elevation 29.76 painted on top of rock on left bank at entrance to rapids. The gauge is located twenty feet below the section.

Channel and Control—Straight for 1,000 feet above and 100 feet below the gauging station to a rapid. Both banks are high, rocky, wooded, and are not liable to overflow. The bed of the stream is composed of clay and gravel, practically permanent. The velocity is moderate, and one channel exists at all stages.

Discharge Measurements—Made by wading during low water periods. At high stages measurements are made from boat with a Price current meter.

Regulation—The operation of logging dams above cause fluctuations in gauge heights during the log-driving season.

Observer—Jas. Blight, Massey.

Discharge Measurements of aux Sables River at Massey in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Feb. 4....	Murray, W. S...	75	155	2.55	18.04	393 (6)	.....
Mar. 9....	" ..	77	127	2.27	17.25	287 (7)	.....
Apr. 14....	" ..	96	964	2.32	26.40	2,241 (8)	.....
May 11....	" ..	97	822	2.15	24.20	1,772	.....
1917							
Feb. 19....	" ..	73	101	2.20	17.45	223(10)	.....
Mar. 12....	" ..	85	92	2.28	17.70	211(11)	.....
April 17....	" ..	97	653	1.58	22.50	1,032(12)	.....
May 14....	" ..	.....	.....	.....	24.04	.....	.....
June 21....	" ..	.....	.....	.....	.....	.....	.....
July 19....	" ..	100	870	2.18	25.29	1,891(13)	.....
Aug. 21....	Newland	75	120	2.31	17.20	278(14)	.....
Sept. 16....	Roberts, E.....	75	124	2.13	16.90	263	.....
Oct. 17....	"	74	109	1.75	16.70	191	.....

(6) Ice measurement.
(7) Ice measurement.
(8) B.M. gauge, elev. = 27.20.
(10) Ice measurement.
(11) Water on top of ice.
(12) Ice coming down river.
(13) Normal
(14) Normal.

Daily Gauge Height and Discharge of aux Sables River at Massey for 1916-7

Drainage Area, 524 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	17.37	314	25.00	1860	21.37	910	22.19	1040	16.70	159	16.70	149	19.04	410	27.04	2430	26.62	2310	27.53	2560	20.95	885	17.20	248
2	17.37	314	24.87	1820	21.37	910	22.04	1010	16.70	159	16.70	145	19.04	426	27.04	2430	27.20	2470	27.45	2540	20.12	720	17.20	248
3	17.37	314	24.66	1760	21.37	910	21.91	980	16.70	159	16.70	145	19.20	452	27.04	2430	27.45	2540	27.45	2540	19.74	650	17.16	243
4	17.37	314	24.54	1730	21.37	890	21.83	960	16.70	159	16.70	145	19.45	492	26.95	2400	27.20	2470	27.32	2500	19.20	550	17.08	234
5	17.37	314	24.04	1600	21.37	890	21.66	925	16.70	159	16.70	145	20.45	690	26.95	2400	28.61	2870	27.24	2480	18.87	495	16.83	206
6	17.37	314	24.04	1600	21.37	890	21.54	900	16.70	159	16.83	151	20.62	720	26.95	2400	28.30	2780	27.20	2470	18.70	468	16.83	206
7	17.37	314	24.04	1600	21.37	890	21.45	885	16.70	159	17.08	158	20.87	770	26.87	2380	27.20	2470	27.28	2490	18.49	434	16.74	198
8	17.37	314	24.04	1600	23.50	1360	21.08	810	16.70	159	17.29	170	20.87	790	26.87	2380	27.86	2660	27.36	2520	18.20	388	16.70	194
9	17.37	314	24.04	1600	25.12	1780	20.62	720	16.70	159	17.49	185	21.04	820	26.66	2320	28.20	2750	27.36	2520	18.08	370	17.20	248
10	17.37	314	24.04	1600	26.70	2220	19.75	560	16.70	159	17.62	196	21.12	840	26.25	2200	28.98	2970	27.36	2520	18.03	362	17.20	248
11	17.45	324	24.04	1570	27.20	2360	19.00	436	16.70	159	17.70	203	21.12	860	25.58	2020	28.36	2800	27.36	2520	18.03	362	17.12	238
12	17.57	338	23.79	1510	27.24	2340	18.33	332	16.70	159	17.70	194	21.04	840	24.46	1710	28.53	2840	27.36	2520	18.03	362	17.08	234
13	17.57	338	23.62	1470	26.62	2170	17.83	264	16.70	159	17.70	194	20.99	850	24.08	1610	28.82	2920	27.36	2520	18.05	362	17.08	234
14	17.57	338	23.17	1350	25.99	1990	17.79	259	16.70	159	17.70	194	20.95	845	24.04	1600	28.20	2750	27.36	2520	17.95	351	17.00	224
15	17.54	335	22.45	1180	25.87	1960	17.66	243	16.70	159	17.70	194	20.91	855	24.08	1610	27.53	2560	27.37	2520	17.95	351	16.87	210
16	17.54	335	21.54	985	25.62	1890	17.58	234	16.70	159	17.70	194	20.97	890	24.41	1700	27.16	2460	27.20	2470	17.91	345	16.87	210
17	18.04	396	21.37	950	25.16	1760	17.45	219	17.37	210	17.70	194	21.08	910	27.04	2430	26.95	2400	26.99	2410	17.87	338	16.87	210
18	18.33	440	21.41	960	24.91	1700	17.37	210	17.33	206	17.70	194	21.50	1000	26.87	2380	26.70	2330	26.74	2340	17.87	338	16.87	210
19	19.29	590	21.45	945	24.49	1590	16.99	177	17.29	202	17.70	194	22.12	1130	26.54	2290	25.95	2120	26.37	2240	17.87	338	16.87	210
20	19.62	655	21.45	945	24.01	1460	16.91	172	17.20	186	17.70	194	22.91	1310	24.87	1820	25.62	2030	25.87	2100	17.87	338	16.87	210
21	20.12	755	21.45	945	23.83	1420	16.87	169	17.12	180	17.70	194	22.87	1300	24.04	1600	25.54	2010	25.58	2020	17.87	338	16.87	210
22	20.12	755	21.49	955	23.70	1380	16.75	162	17.12	180	17.70	194	25.45	1980	24.29	1670	25.54	2010	25.03	1860	17.12	238	16.87	210
23	21.04	950	21.45	945	23.62	1360	16.70	159	16.99	170	17.70	194	28.95	2960	24.37	1680	25.54	2010	24.87	1820	16.95	219	16.87	210
24	22.04	1190	21.45	945	23.29	1280	16.70	159	16.95	168	17.95	230	29.11	3010	24.54	1730	25.54	2010	24.87	1820	17.03	228	16.87	210
25	22.54	1310	21.58	975	23.08	1230	16.70	159	16.95	162	18.25	266	29.20	3030	24.79	1800	25.54	2010	24.49	1720	17.45	278	16.87	210
26	23.16	1460	21.70	1000	23.04	1230	16.70	159	16.91	160	18.79	341	28.53	2840	25.08	1880	25.54	2010	24.28	1660	17.62	302	16.87	210
27	23.70	1590	21.79	995	22.95	1200	16.70	159	16.79	153	18.95	381	27.99	2690	24.37	1690	25.20	1910	23.99	1590	17.87	338	16.87	210
28	24.37	1750	21.83	1000	22.75	1160	16.70	159	16.70	149	19.04	394	27.27	2490	24.79	1800	26.79	2360	23.74	1520	17.82	331	16.87	210
29	24.95	1890	21.50	935	22.66	1140	16.70	159	.....	.....	19.04	394	26.91	2390	25.20	1910	27.36	2520	23.66	1500	17.70	313	16.87	210
30	25.20	1950	21.37	910	22.45	1090	16.70	159	.....	.....	19.04	410	26.99	2410	25.49	1990	27.70	2610	23.28	1400	17.57	295	16.87	210
31	25.20	1950	.....	.....	22.29	1060	16.70	159	.....	.....	19.04	410	.....	.....	26.20	2190	.....	.....	22.66	1250	17.20	248	.....	....

Monthly Discharge of aux Sables River at Massey for 1916-7

Drainage Area. 524 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	1,950	[illegible]	735	3.72	.60	1.40	1.61
November "	1,860	[illegible]	1,275	3.55	1.74	2.43	2.71
December "	2,360	[illegible]	1,433	4.50	1.70	2.73	3.15
January .. (1917)	1,040	[illegible]	423	1.98	.30	.81	.93
February.....	210	[illegible]	167	.40	.28	.32	.33
March.....	410	145	224	.78	.28	.43	.50
April	3,030	410	1,367	5.78	.78	2.61	2.91
May.....	2,430	1,600	2,028	4.64	3.05	3.87	4.46
June.....	2,970	1,910	2,432	5.67	3.65	4.64	5.17
July.....	2,560	1,250	2,176	4.89	2.39	4.15	4.78
August.....	885	219	385	1.69	.42	.73	.84
September	248	194	219	.47	.37	.42	.47
The year	3,030	145	1,077	5.78	.28	2.06	27.90

Blanche River near Englehart

Location—At the highway bridge near the High Falls, 3½ miles north-west of the Town of Englehart, north half of lot 12, concession 3, Township of Evanturel, Temiskaming District.

Records Available—Discharge measurements, August, 1914, to October, 1916. Gauge heights from October 8, 1914, with occasional omissions.

Drainage Area—430 square miles.

Gauge—Vertical steep staff 0-12 feet, located on the southeast downstream side of first pier. The zero on the gauge (elev. 8.00) is referred to B.M. elev. 23.39, painted on a conspicuous rock on the right bank 75 feet below the bridge.

Channel—At a point 200 feet above the station, the river curves from the right and then flows straight, up to a point 700 feet below the station. Both banks are high, rocky, wooded, and will not overflow. The bed of the stream is composed of clay, practically permanent. The current is very slow, flowing through 2 channels at low stages and 3 channels during high water periods.

Discharge Measurements—Made from the highway bridge with a Price current meter.

Winter Flow—During the winter months measurements are made through the ice to determine the winter discharge. The relation of gauge height to discharge is seriously affected by ice.

Regulation—A temporary dam is built above the station during the summer months. This dam is used for storing water during the period when the river is used for log driving. The gauge heights at the section are therefore affected during the log driving periods.

Accuracy—Rating curve fairly well defined between gauge heights 10.50 feet and 12.00 feet.

Observer—W. D. Groom, Englehart.

Discharge Measurements of Blanche River near Englehart in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 4....	Murray, W. S..	91	614	.43	10.25	263	.....
Nov. 9....	" ..	110	870	1.15	13.00	1,002	.....
1917							
Jan. 23....	" ..	31	129	1.97	10.70	254(24)	.....
Feb. 27....	" ..	65	339	.58	10.29	197(25)	.....
April 24....	" ..	82	759	.79	12.02	600(26)	.....
May 22....	" ..	116	1,031	2.11	14.75	2,177	.....
June 4....	" ..	101	925	1.22	13.58	1.128	.....
July 23....	" ..	84	639	.67	11.42	432	.....
Aug. 27....	Newland	89	686	.53	11.00	360	.....
Oct. 25....	Roberts, E.....	101	781	.47	11.79	366	.....

(24) Ice measurement. Reading taken 300 feet below regular section.
(25) Ice measurement. Reading taken 300 feet below regular section.
(26) Floating ice may affect.

Daily Gauge Height and Discharge of Blanche River near Englehart for 1916-7

Drainage Area, 430 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	10.25	210	.....	.....	10.62	247	10.83	274	.....	.....	.....	.....	.....	.....	17.08	4480	13.08	934	12.50	710	10.42	273	12.17	612
2	10.25	210	.....	.....	10.66	252	10.83	274	10.71	246	10.16	186	.....	.....	18.08	5480	13.16	971	12.16	609	10.42	273	12.08	587
3	10.25	210	.....	.....	10.66	252	10.83	274	10.66	240	.....	.....	.....	.....	18.00	5400	13.58	1205	12.16	609	.....	....	11.83	522
4	10.25	210	.....	.....	10.75	264	10.83	274	.....	.....	10.12	183	.....	.....	17.50	4900	13.50	1155	12.08	587	10.42	273	11.83	522
5	10.25	210	.....	.....	10.83	274	10.83	274	10.75	251	.....	.....	10.08	179	16.83	4230	13.41	1102	12.00	565	10.25	251	11.42	434
6	10.25	210	.....	.....	10.91	284	10.83	274	.....	.....	10.12	183	10.00	172	16.75	4150	13.33	1057	12.00	565	10.25	251	11.58	467
7	10.25	210	.....	.....	11.00	297	10.83	274	10.66	240	.....	.....	10.00	172	16.91	4310	13.08	934	11.91	542	10.17	241	11.42	434
8	10.25	210	.....	.....	11.00	297	10.83	274	.....	.....	9.92	165	.....	.....	17.50	4900	13.00	900	11.75	504	.....	....	11.33	417
9	10.27	214	13.00	900.	11.00	297	10.83	274	10.50	221	.....	.....	10.00	172	16.83	4230	13.41	1102	12.91	862	10.00	221	11.25	403
10	10.27	214	.....	.....	11.00	297	10.83	274	.....	.....	9.75	151	.....	.....	16.50	3900	13.41	1102	13.16	971	9.83	203	11.00	359
11	10.27	214	.....	.....	11.00	297	10.83	274	.....	.....	.....	.....	10.16	186	17.25	4650	13.08	934	13.33	1057	9.83	203	10.83	331
12	10.27	214	.....	.....	11.00	297	10.83	274	10.33	203	9.75	151	.....	.....	17.00	4400	12.91	862	13.58	1205	9.83	203	10.58	294
13	10.27	214	.....	.....	11.00	297	10.83	274	.....	.....	.....	.....	10.00	172	15.83	3230	12.91	862	13.91	1430	9.83	203	10.67	307
14	10.25	210	.....	.....	10.91	284	.....	.....	10.50	221	9.75	151	.....	.....	15.83	3230	13.33	1057	13.83	1373	9.83	203	10.58	294
15	10.25	210	.....	.....	10.83	274	.....	.....	.....	.....	.....	.....	10.00	172	15.66	3060	13.91	1430	13.83	1373	.....	....	10.58	294
16	10.25	210	.....	.....	10.75	264	.....	.....	10.41	211	9.75	151	.....	.....	15.41	2810	14.33	1757	13.58	1205	10.00	221	10.58	294
17	10.29	218	.....	.....	10.66	252	.....	.....	.....	.....	9.75	151	10.00	172	15.16	2560	14.08	1555	13.33	1057	10.00	221	10.58	294
18	10.29	218	.....	.....	10.66	252	.....	.....	10.41	211	9.75	151	10.10	181	14.91	2310	13.83	1373	13.00	900	9.92	212	10.41	271
19	10.29	218	.....	.....	10.66	252	.....	.....	.....	.....	.....	.....	10.16	186	15.00	2400	13.50	1155	12 67	769	10.08	231	10.50	283
20	10.29	218	.....	.....	10.66	252	.....	.....	10.50	221	9.75	151	10.66	240	15.33	2730	13.33	1057	12.42	685	.....	....	10.50	283
21	10.29	218	.....	.....	10.75	264	.....	.....	.....	.....	.....	.....	10.66	252	15.58	2980	.....	....	12.17	612	10.17	241	10.41	271
22	11.16	435	.....	.....	10.83	274	.....	.....	10.50	221	9.75	151	12.08	511	14.66	2060	13.00	900	12.00	565	.....	....	10.58	294
23	11.16	435	.....	.....	10.91	284	10.71	246	.....	.....	.....	.....	12.00	515	16.33	3730	12.83	831	11.92	544	10.42	273	10.58	294
24	11.16	435	.....	.....	11.00	297	.....	.....	10.58	231	9.84	158	12.00	539	16.33	3730	12.66	765	10.50	283	10.58	294	10.42	273
25	11.16	435	.....	.....	11.00	297	10.66	240	.....	.....	.....	.....	12.00	565	16.16	3560	11.75	504	10.42	273	.....	....	10.42	273
26	11.16	435	10.58	243	10.91	284	.....	.....	10.33	203	10.16	186	.....	.....	15.58	2980	10.41	271	10.50	283	10.83	331	10.42	273
27	11.16	435	10.58	243	10.91	284	10.75	251	.....	.....	.....	.....	12.41	682	15.25	2650	10.50	283	10.58	294	11.33	417	10.50	283
28	11.16	435	10.58	243	10.83	274	.....	.....	10.25	195	.....	.....	13.91	1430	14.75	2150	10.66	305	.....	....	11.83	522	10.50	283
29	11.16	435	10.62	247	10.83	274	10.75	251	.....	.....	.....	.....	15.33	2730	14.25	1690	11.16	387	10.42	273	11.83	522	10.50	283
30	11.16	435	10.62	247	10.83	274	.....	.....	.....	.....	.....	.....	16.50	3900	13.16	971	11.19	392	10.42	273	12.33	658	10.50	283
31	11.16	435	.....	.....	10.83	274	10.71	246	.....	.....	.....	.....	.....	.....	12.91	862	.....	....	10.42	273	12.33	658	.....	....

Monthly Discharge of Blanche River near Englehart for 1916-7

Drainage Area, 430 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October...(1916)	435	210	285	1.01	.48	.66	.76
November "	900	243	354	2.09	.56	.82	.91
December "	297	247	276	.69	.57	.64	.74
January .. (1917)	274	240	266	.64	.56	.62	.71
February	251	195	222	.58	.45	.52	.54
March.....	186	151	162	.43	.35	.38	.44
April	3.900	172	656	9.07	.40	1.53	1.71
May.....	5,480	862	3,378	12.74	2.00	7.85	9.05
June.....	1,757	271	936	4.09	.63	2.18	2.43
July.....	1,430	273	708	3.33	.63	1.65	1.90
August.....	658	203	304	1.54	.47	.71	.82
September	612	271	350	1.42	.63	.81	.90
The year	5,480	151	658	12.74	.35	1.53	20.77

Frederickhouse River at Frederickhouse

Location—On the upstream side of the highway bridge crossing the river on the township line between the Townships of Fournier and Clute, District of Temiskaming.

Records Available—Discharge measurements and daily gauge heights to September 30, 1917, from July, 1915, have been taken at the railway crossing 1.8 miles north and downstream from the present point of observation and measurement.

Drainage Area—1,260 square miles.

Gauge—Standard enamelled gauge plates 0-12 feet on the upstream side of the first pier from the left bank. Zero of the gauge is at an assumed elevation of 98.00 feet referred to a B.M. elev. 115.18, the top of an iron cap projecting above the floor of the bridge west of the west pier.

Channel and Control—The current is slow, but even across the section, and through one channel, away from the bridge, where discharge measurements are made when possible. Otherwise measurements are made from the bridge that breaks the flow into several channels.

Discharge Measurements—Made by current meter from the bridge, ice, or boat.

Regulation—There is no artificial control of the waters of this river above the new section.

Observer—Allard Bourassa, Frederickhouse.

Discharge Measurements of Frederickhouse River at Frederickhouse in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Jan. 24....	Murray, W. S..	160	1,198	.40	12.66	485(9)	.....
May 23....	" ..	188	1,085	9.83	14.20	10,674(10)	.....
June 5....	" ..	195	2,191	3.04	14.08	6,673	.....
July 24....	" ..	151	1,404	1.82	11.50	2,550	.....
Aug. 30....	Newland	147	1,146	1.16	10.75	1,327	.....
" 30....	"	147	1,146	1.16	10.42	1,327	.....
Oct. 23....	Roberts, E.....	148	1,136	1.10	10.65	1,316	.....

(9) Ice measurements, taken two miles above regular section.
(10) Surface velocities.

Daily Gauge Height and Discharge of Frederickhouse River at Frederickhouse for 1916-7

Drainage Area, 1,260 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	9.62	320	10.25	950	12.08	2800	13.91	6440	11.75	2400	10.16	660	9.91	410	14.00	7400	14.58	9780	12.08	3040	12.50	3660	10.58	1290
2	9.58	280	10.58	1290	12.00	2700	13.83	6180	11.75	2400	10.16	660	10.08	580	14.41	9080	14.58	9780	12.16	3150	12.33	3400	10.50	1200
3	9.58	280	10.87	1610	12.16	2890	13.83	6180	11.66	2290	10.16	660	10.16	660	14.08	7730	14.33	8750	12.16	3150	12.17	3170	10.50	1200
4	9.58	280	11.00	1750	12.00	2700	13.83	6180	11.58	2200	10.08	580	10.16	660	14.58	9780	14.16	8060	12.16	3150	11.92	2840	10.42	1120
5	9.58	280	11.00	1750	11.83	2500	13.75	5920	11.41	1990	10.08	580	10.16	660	14.75	10480	14.08	7730	12.08	3040	11.83	2740	10.33	1030
6	9.58	280	11.00	1750	11.75	2400	13.75	5920	11.29	1850	10.08	580	10.16	660	13.25	5150	13.83	6840	12.00	2940	11.67	2540	10.33	1030
7	9.58	280	11.08	1840	11.75	2400	13.58	5460	11.16	1710	10.00	500	10.16	660	13.08	4740	13.66	6280	11.91	2830	11.58	2440	10.33	1030
8	9.58	280	11.25	2040	11.66	2290	13.58	5460	11.08	1620	10.00	500	10.16	660	13.00	4550	13.50	5750	11.83	2740	11.42	2240	10.25	950
9	9.58	280	11.41	2230	11.66	2290	13.58	5460	11.00	1530	10.00	500	10.00	500	13.00	4550	13.41	5530	11.75	2640	11.25	2040	10.33	1030
10	9.58	280	11.50	2100	11.66	2290	13.50	5270	11.00	1530	9.91	410	9.91	410	13.25	5150	13.25	5150	11.66	2530	11.17	1940	10.42	1120
11	9.58	280	11.50	2100	11.83	2500	13.50	5270	10.87	1390	9.91	410	9.91	410	13.41	5530	13.08	4740	11.66	2530	11.00	1750	10.33	1030
12	9.58	280	11.33	1900	12.08	2800	13.41	5050	10.75	1260	9.91	410	9.91	410	13.33	5340	13.00	4550	11.66	2530	10.92	1660	10.33	1030
13	9.58	280	11.66	2290	12.33	3110	13.33	4860	10.66	1160	9.91	410	9.91	410	13.83	6840	13.08	4740	12.66	3920	10.92	1660	10.33	1030
14	9.58	280	11.75	2400	12.41	3220	13.25	4670	10.58	1080	9.91	410	9.91	410	13.83	6840	13.08	4740	12.50	3660	10.83	1560	10.25	950
15	9.58	280	11.83	2500	12.41	3220	13.21	4570	10.50	1000	9.87	370	9.96	460	13.75	6580	13.08	4740	12.25	3280	10.75	1480	10.25	950
16	9.60	300	11.91	2590	12.50	3350	13.16	4470	10.41	910	9.83	330	10.00	500	14.08	7730	13.16	4930	12.08	3040	10.67	1390	10.16	860
17	9.58	280	11.91	2590	12.50	3740	13.00	4170	10.41	910	9.83	330	10.00	500	14.41	9080	13.08	4740	12.00	2940	10.67	1390	10.16	860
18	9.58	280	11.83	2500	12.75	3870	13.00	4170	10.41	910	9.83	330	10.00	500	14.41	9080	12.91	4370	11.92	2840	10.58	1290	10.08	780
19	9.58	280	11.75	2400	12.75	4170	13.00	4170	10.33	830	9.83	330	10.08	580	14.66	10110	12.75	4080	11.83	2740	10.75	1480	10.08	780
20	9.58	280	11.66	2290	12.83	4170	12.91	4010	10.33	830	9.83	330	10.25	750	14.66	10110	12.75	4080	11.75	2640	10.83	1560	10.08	780
21	9.62	320	11.50	2100	13.00	4470	12.83	3870	10.33	830	9.83	330	10.58	1080	14.66	10110	12.66	3920	11.67	2540	10.75	1480	10.08	780
22	9.77	470	11.91	2590	13.00	4670	12.75	3740	10.33	830	9.83	330	10.75	1260	14.50	9450	12.58	3790	11.58	2440	10.67	1390	10.08	780
23	9.83	530	11.58	2200	13.16	4470	12.75	3740	10.25	750	9.83	330	10.91	1430	14.33	8750	12.50	3660	11.50	2340	10.58	1280	10.08	780
24	9.91	610	11.41	1990	13.25	4670	12.66	3600	10.25	750	9.83	330	11.25	1860	14.66	10110	12.50	3660	11.50	2340	10.58	1280	10.08	780
25	9.91	610	11.33	1900	13.75	5920	12.41	3220	10.25	750	9.83	330	11.83	2500	14.50	9450	12.41	3520	11.42	2240	10.67	1390	10.08	780
26	10.08	780	11.50	2100	14.08	7000	12.25	3000	10.25	750	9.91	410	12.91	4370	14.50	9450	12.33	3400	11.42	2240	10.67	1390	10.08	780
27	10.16	860	11.83	2500	14.16	7270	12.16	2890	10.25	750	9.91	410	13.33	5340	14.50	9450	12.25	3280	11.33	2140	10.83	1560	10.08	780
28	10.21	910	12.08	2800	14.08	7000	12.08	2800	10.25	750	9.91	410	13.33	5340	14.50	9450	12.16	3150	11.25	2040	10.83	1560	10.08	780
29	10.21	910	12.08	2800	14.16	7270	11.91	2590	.....	....	9.91	410	13.41	5530	14.50	9450	12.08	3040	11.17	1940	10.83	1560	10.08	780
30	10.25	950	12.08	2800	14.16	7270	11.83	2500	.....	....	9.83	330	14.25	8420	14.50	9450	12.08	3040	11.17	1940	10.75	1480	10.08	780
31	10.25	950	.....	....	14.16	7270	11.83	2500	.....	....	9.83	330	.....	....	14.50	9450	.....	....	11.08	1840	10.67	1390	.....	....

Monthly Discharge of Frederickhouse River at Frederickhouse for 1916-7

Drainage Area, 1,260 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	950	280	437	.75	.22	.35	.40
November "	2,800	950	2,155	2.22	.75	1.71	1.91
December "	7,270	2,290	4,090	5.76	1.82	3.25	3.75
January .. (1917)	6,440	2,500	4,468	5.11	1.98	3.55	4.09
February	2,400	750	1,284	1.90	.60	1.02	1.06
March	660	330	428	.52	.26	.34	.39
April.....	8,420	410	1,595	6.68	.32	1.27	1.42
May	10,480	4,550	8,085	8.32	3.61	6.42	7.40
June.....	9,780	3,040	5,127	7.76	2.41	4.07	4.54
July.....	3,920	1,840	2,850	3.11	1.46	2.26	2.61
August	3,660	1,290	1,871	2.90	1.02	1.49	1.72
September	1,290	780	928	1.02	.62	.74	.83
The year	10,480	280	2,791	8.32	.22	2.22	30.07

Kagawong River at Kagawong

Location—150 feet below Kagawong Falls in the Village of Kagawong, Township of Billings, Manitoulin Island.

Records Available—Discharge measurements from July, 1915. Daily gauge heights from July 11, 1915, to December 31, 1917.

Drainage Area—94 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, connected to a 2 x 4 scantling and attached to a large rock in stream 20 feet below the gauging station. Zero of the gauge (elev. 10.00 feet) is referred to a bench mark (elev. 15.86 feet) painted on a rock on right bank at the gauging station. The initial point for soundings is located on an iron post on the left bank opposite the bench mark.

Channel—Straight for about 100 feet above and below the gauging station. Both banks are high and wooded, and are not liable to overflow. The bed of the stream is composed of rock and clay, slightly shifting, one channel existing at all stages.

Discharge Measurements—Made by wading with a small Price current meter.

Regulation—The flow is controlled by the dam 200 feet above the falls.

Accuracy—A mill operates just above the section, but gauge readings are taken at such times as should show a fairly accurate mean of elevation.

Observer—Cora Hunt, Kagawong.

Discharge Measurements of Kagawong River at Kagawong in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 17	Murray, W. S..	22	31	1.61	11.25	49	.....
1917							
July 20	" ..	22	30	4.71	11.60	143	.....
Aug. 19	Newland.....	20	21	2.74	11.25	56	.....
							.....

Daily Gauge Height and Discharge of Kagawong River at Kagawong for 1916-7

Drainage Area, 94 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	10.91	27	10.91	29	11.58	67	11.58	67	11.66	77	11.33	39	11.66	126	12.00	187	11.50	97	11.75	142	11.58	111	11.17	54
2	11.00	32	10.87	26	11.58	67	11.58	67	11.91	117	11.50	57	11.75	142	12.08	201	11.58	111	11.75	142	11.25	63	11.16	53
3	10.95	29	10.91	29	11.58	67	11.75	90	11.91	117	11.54	62	11.75	142	12.00	187	11.66	126	11.83	156	11.25	63	11.16	53
4	10.83	22	10.91	29	11.58	67	11.50	57	11.91	117	11.75	90	11.83	156	12.00	187	11.66	126	11.83	156	11.25	63	11.16	53
5	10.83	22	10.83	23	11.58	67	11.50	57	11.66	77	11.75	90	11.83	156	12.00	187	11.66	126	11.75	142	11.25	63	11.16	53
6	10.91	27	10.83	23	11.58	67	11.50	57	11.58	67	11.58	67	11.83	156	12.00	187	11.66	126	11.66	126	11.25	63	11.16	53
7	10.91	27	10.83	23	11.66	77	11.50	57	11.58	67	11.41	47	11.75	142	12.00	187	11.66	126	11.66	126	11.25	63	11.16	53
8	10.91	27	10.91	29	11.66	77	11.58	67	11.58	67	11.50	57	11.75	142	12.00	187	11.66	126	11.66	126	11.25	63	11.16	53
9	10.91	27	10.91	29	11.75	90	11.75	90	11.75	90	11.58	67	11.83	156	11.91	171	11.66	126	11.66	126	11.25	63	11.16	53
10	10.91	27	10.83	23	11.83	102	11.91	117	11.83	102	11.41	47	11.83	156	12.00	187	11.75	142	11.66	126	11.25	63	11.16	53
11	10.91	27	10.83	23	11.91	117	12.16	162	12.16	162	11.50	57	11.83	156	12.00	187	11.75	142	11.66	126	11.25	63	11.16	53
12	10.91	27	10.91	29	11.83	102	11.91	117	12.33	192	11.50	57	11.91	171	12.00	187	11.75	142	11.66	126	11.25	63	11.16	53
13	10.91	27	10.91	29	11.75	90	11.83	102	12.33	192	11.41	47	11.91	171	12.00	187	11,75	142	11.66	126	11.25	63	11.25	63
14	10.87	24	11.00	36	11.75	90	11.58	67	11.83	102	11.41	47	11.83	156	12.00	187	11.75	142	11.66	126	11.25	63	11.25	63
15	10.83	22	11.16	53	11.83	102	11.58	67	11.66	77	11.41	47	11.83	156	12.00	187	11.75	142	11.67	128	11.25	63	11.25	63
16	10.91	27	11.25	63	11.91	117	11.75	90	11.66	77	11.41	47	11.83	156	12.00	187	11.75	142	11.67	128	11.25	63	11.16	53
17	10.91	27	11.25	63	11.91	117	11.75	90	11.58	67	11.50	57	11.91	171	12.00	187	11.75	142	11.67	128	11.25	63	11.25	63
18	10.91	27	11.33	73	12.00	133	11.58	67	11.58	67	11.50	57	11.91	171	12.00	187	11.75	142	11.58	111	11.25	63	11.16	53
19	10.91	27	11.33	73	12.16	162	11.75	90	11.58	67	11.83	102	11.83	156	11.75	142	11.83	156	11.50	97	11.25	63	11.16	53
20	10.91	27	11.46	91	12.00	133	11.58	67	11.58	67	11.50	57	11.87	164	11.50	97	11.83	156	11.50	97	11.25	63	11.16	53
21	10.91	27	11.41	84	11.75	90	11.75	90	11.54	62	11.58	67	11.91	171	11.50	97	11.83	156	11.50	97	11.25	63	11.16	53
22	10.83	22	11.50	97	11.75	90	12.50	223	11.58	67	11.58	67	11.91	171	11.50	97	11.83	156	11.50	97	11.25	63	11.16	53
23	10.91	27	11.50	97	11.75	90	12.08	147	11.50	57	11.58	67	11.91	171	11.50	97	11.83	156	11.58	111	11.25	63	11.16	53
24	10.91	27	11.50	97	12.08	147	11.75	90	11.66	77	11.66	77	12.00	187	11.50	97	11.75	142	11.50	97	11.25	63	11.16	53
25	10.91	27	11.50	97	11.96	126	11.75	90	11.75	90	11.58	67	12.00	187	11.50	97	11.75	142	11.50	97	11.25	63	11.08	44
26	10.91	27	11.50	97	12.25	178	11.58	67	11.66	77	11.58	67	12.00	187	11.50	97	11.75	142	11.50	97	11.17	54	11.08	44
27	10.91	27	11.50	97	11.75	90	11.58	67	11.66	77	11.83	102	12.00	187	11.50	97	11.83	156	11.50	97	11.17	54	11.08	44
28	10.91	27	11.50	97	12.00	133	11.66	77	11.50	57	11.66	77	12.00	187	11.50	97	11.75	142	11.50	97	11.17	54	11.08	44
29	10.83	22	11.58	111	11.91	117	11.58	67	.....	.....	11.75	90	12.00	187	11.50	97	11.66	126	11.50	97	11.17	54	11.08	44
30	10.91	27	11.58	111	12.00	133	11.58	67	.....	.....	11.75	90	12.00	187	11.50	97	11.66	126	11 42	85	11.17	54	11.08	44
31	10.91	27	.....	.....	11.75	90	11.50	57	.....	.....	11.75	90	.....	.....	11.50	97	.....	.....	11.42	85	11.17	54	.....	....

Monthly Discharge of Kagawong River at Kagawong for 1916-7

Drainage Area, 94 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October ..(1916).	32	22	26	.33	.23	.28	.32
November "	111	23	59	1.18	.24	.63	.70
December "	178	67	103	1.89	.71	1.10	1.27
January ..(1917).	223	57	87	2.37	.61	.93	1.07
February	192	57	90	2.04	.61	.96	1.00
March.....	102	39	66	1.08	.41	.70	.81
April	187	126	164	1.99	1.34	1.74	1.94
May.....	201	97	151	2.14	1.03	1.61	1.86
June	156	97	137	1.66	1.03	1.46	1.63
July.....	156	85	117	1.66	.90	1.24	1.43
August	111	54	63	1.18	.57	.67	.77
September.....	63	44	53	.67	.47	.56	.62
The year	201	22	93	2.14	.23	.99	13.44

Mattagami River at Smooth Rock Falls

Location—Lot 23, Concession XI, Township of Kendry, Temiskaming District. About one mile below the plant of the Mattagami Pulp and Paper Co. at Smooth Rock Falls.

Records Available—The Mattagami Pulp and Paper Co. take readings of the water below their plant, from which it is expected estimates of flow may be made when a curve is defined.

Drainage Area—3,970 sq. miles.

Gauge—A chain gauge is installed reading zero with the elevation of the water at 707.00, referred to a B.M. elev. 725.04. The B.M. is 10 feet S.W. of the initial point for soundings the head of a nail driven in a blazed and painted tree.

Channel and Control—A well-defined, evenly distributed current exists at all times. There is but one channel at all stages. Extreme high water is not likely to go over the river banks at this spot. The control point is not well defined, or as yet has not been ascertained.

Regulation—Extensive storage works have been constructed for the purposes of regulating the headwaters of the river for the benefit of power plants.

Discharge Measurements—Made by current meter from a boat or the ice.

Co-operation—The engineers and officers of the Mattagami Pulp and Paper Co. co-operated with the Commission's engineers in obtaining discharge measurements and have taken elevations of water level below the plant from which it is expected estimates of flow antedating the making of discharge measurements will be possible.

Winter Flow—The amount of ice effect on discharge is not yet determined, but will be considerable.

Mississagi River at Iron Bridge

Location—At highway bridge in the village of Iron Bridge, south half of lot 3, concession 2, Township of Gladstone, District of Algoma.

Records Available—Discharge measurements from September, 1915. Daily gauge heights from November 16, 1915.

Drainage Area—3,565 square miles.

Gauge—Vertical steel staff with enamelled face graduated in feet and inches, 0 to 6 foot section placed on pile on left shore 350 feet down stream from bridge, 6 to 12 foot section placed on down stream side of right abutment of bridge. Zero of the gauge (elev. 30.00) referred to bench mark (elev. 55.50 feet) on top of right abutment down stream side.

Channel—Straight for about 300 feet above and about 1 mile below the gauging station. The bed of the stream consists of clay and sand, slightly shifting.

Discharge Measurements—Made from highway bridge with small Price current meter.

Control—About eleven miles below the gauging station there is a small falls and rapids known as the Mississagi rapids. Log jams sometimes occur on these rapids during low water period, which may cause back water at the gauging station.

Winter Flow—During the winter months measurements are made through the ice to determine the winter flow. The relation of gauge height to discharge is seriously affected by ice.

Observer—Jas. Tulloch, Iron Bridge.

Discharge Measurements of Mississagi River at Iron Bridge in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 19....	Murray, W. S...	165	2,464	1.02	32.39	2,516	.....
Nov. 17....	"	177	3,054	1.98	35.79	6,045	.....
1917							
Jan. 30....	"	155	2,414	.37	33.33	898(9)	.....
Feb. 20....	"	225	2,238	.58	32.54	1.297(10)	.....
Mar. 13....	"	225	2,277	.58	32.75	1,320(11)	.....
June 20....	"	187	3,716	3.06	39.33	11,402	.....
July 18....	"	182	3,489	2.69	38.00	9,374	.....
Aug. 22....	Newland, S. G...	165	2,433	1.02	31.92	2,509	.....
Sept. 15....	Roberts, E.	162	2,454	.61	31.42	1,495	.....
Oct. 16....	"	158	2,340	.50	30.75	1,176	.....

(9) Ice measurement, conditions bad.
(10) Ice measurement taken 2½ miles below regular section.
(11) Ice measurement taken 2½ miles below regular section.

Daily Gauge Height and Discharge of Mississagi River at Iron Bridge for 1916-7

Drainage Area, 3,565 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	32.33	2580	37.83	8940	34.75	4480	36.58	5530	33.33	1990	32.58	1230	33.66	2100	39.66	12030	39.66	12030	36.33	6810	33.75	3930	31.50	1780
2	32.29	2540	38.08	9330	34.50	4180	36.33	5220	33.25	1920	32.58	1220	33.66	2100	40.00	12680	40.00	12680	36.25	6700	33.67	3850	31.54	1820
3	32.16	2410	38.08	9330	34.41	4040	36.00	4820	33.16	1830	32.58	1210	34.00	2410	41.16	14880	40.50	13630	36.16	6590	33.58	3760	31.54	1820
4	32.00	2250	38.00	9200	34.33	3910	35.83	4620	33.08	1760	32.58	1200	34.00	2410	40.58	13780	43.00	18380	36.08	6480	33.50	3680	31.50	1780
5	32.00	2250	37.83	8940	34.33	3860	35.66	4420	33.00	1690	32.58	1200	34.00	2410	40.16	12980	43.83	19960	36.00	6380	33.42	3600	31.46	1740
6	31.92	2170	37.58	8560	34.25	3730	35.41	4140	32.91	1610	32.58	1190	34.08	2480	39.75	12200	43.83	19960	35.91	6270	33.33	3510	31.42	1710
7	31.84	2090	37.16	7930	34.41	3840	35.25	3950	32.83	1540	32.58	1180	34.08	2480	39.58	11880	43.16	18680	35.83	6180	33.25	3430	31.38	1670
8	31.75	2000	37.16	7930	34.75	4130	35.16	3830	32.75	1460	32.58	1170	34.08	2480	39.50	11730	42.58	17580	35.75	6080	33.17	3350	31.33	1630
9	31.67	1920	37.16	7930	36.66	6150	35.08	3720	32.66	1380	32.58	1160	34.00	2410	39.50	11730	42.00	16480	35.67	5980	33.08	3260	31.29	1590
10	31.59	1840	37.00	7710	36.75	6200	34.91	3520	32.58	1310	32.62	1190	33.83	2260	39.58	11880	41.50	15530	35.58	5880	32.92	3100	31.25	1560
11	31.59	1840	36.91	7580	36.75	6140	34.75	3330	32.58	1310	32.66	1210	33.75	2180	39.83	12360	41.16	14880	35.50	5780	32.75	2930	31.21	1520
12	31.67	1920	36.75	7360	36.83	6180	34.58	3160	32.58	1310	32.71	1250	33.66	2100	40.16	12980	41.16	14880	35.42	5680	32.67	2850	31.17	1480
13	31.84	2090	36.66	7210	36.83	6180	34.50	3080	32.58	1310	32.75	1280	33.58	2030	38.00	9200	40.83	14260	35.33	5580	32.58	2760	31.13	1450
14	31.92	2170	36.50	6980	36.90	6260	34.33	2910	32.58	1310	32.75	1280	33.41	1880	39.50	11730	40.66	13930	35.25	5500	32.50	2680	31.08	1400
15	31.96	2210	36.41	6840	37.03	6420	34.16	2740	32.58	1310	32.75	1280	33.16	1650	39.66	12030	40.50	13630	35.17	5410	32.42	2610	31.08	1400
16	32.16	2410	36.25	6600	37.15	6580	34.08	2660	32.58	1310	32.79	1320	33.00	1510	40.00	12680	40.25	13160	35.08	5310	32.40	2590	31.00	1330
17	32.58	2830	36.08	6360	37.27	6730	34.00	2590	32.58	1310	32.83	1360	32.83	1360	39.83	12360	40.00	12680	35.00	5220	32.33	2530	30.96	1290
18	32.58	2830	35.83	6060	37.39	6890	33.91	2510	32.58	1310	32.91	1430	32.83	1360	39.58	11880	39.75	12200	34.92	5130	32.33	2530	30.92	1260
19	32.66	2910	35.58	5760	37.50	7030	33.83	2440	32.56	1290	33.00	1510	33.16	1650	39.16	11420	39.50	11730	34.83	5030	32.25	2460	30.88	1220
20	32.83	3080	35.33	5470	37.62	7190	33.75	2360	32.54	1280	33.04	1550	33.50	1960	39.16	11120	39.16	11120	34.75	4940	32.17	2380	30.83	1180
21	34.00	4260	35.00	5110	37.75	7360	33.66	2280	32.58	1300	33.08	1580	34.25	2640	39.16	11120	38.83	10540	34.67	4860	32.08	2300	30.75	1100
22	34.33	4590	34.91	5010	37.86	7510	33.58	2210	32.58	1290	33.16	1650	35.00	3380	39.16	11120	38.41	9860	34.58	4760	32.00	2230	30.75	1100
23	34.58	4840	34.83	4920	37.97	7630	33.58	2210	32.58	1280	33.25	1740	35.08	3460	39.16	11120	38.41	9860	34.50	4680	31.92	2160	30.73	1090
24	36.33	6600	34.83	4920	38.08	7740	33.54	2180	32.58	1280	33.33	1810	36.16	5180	39.16	11120	37.00	7710	34.42	4600	31.88	2120	30.71	1070
25	37.08	7360	35.00	5060	37.91	7460	33.50	2140	32.58	1270	33.41	1880	37.33	7330	39.16	11120	36.83	7470	34.33	4510	31.83	2080	30.69	1050
26	37.08	7360	35.33	5360	37.66	7080	33.50	2140	32.58	1260	33.50	1960	38.00	9200	39.16	11120	36.75	7360	34.25	4430	31.50	1780	30.67	1030
27	37.08	7360	35.58	5580	37.50	6840	33.41	2060	32.58	1250	33.58	2030	37.50	8440	39.25	11280	36.66	7240	34.17	4350	31.50	1780	30.67	1030
28	37.08	7360	35.83	5820	37.33	6580	33.37	2020	32.58	1240	33.58	2030	37.66	8680	39.25	11280	36.58	7130	34.08	4260	31.50	1780	30.67	1030
29	37.08	7360	35.66	5560	37.08	6220	33.33	1990	.....	.....	33.58	2030	38.08	9330	39.25	11280	36.50	7030	34.00	4180	31.48	1760	30.67	1030
30	37.25	7530	35.16	4960	36.75	5790	33.33	1990	.....	.....	33.58	2030	38.33	9730	39.41	11570	36.41	6910	33.92	4100	31.50	1780	30.71	1070
31	37.08	7360	.....	.....	.....	5760	33.33	1990	.....	.....	33.62	2070	.....	.....	39.50	11730	.....	.....	33.83	4010	31.50	1780	.....	.....

Monthly Discharge of Mississagi River at Iron Bridge for 1916-7

Drainage Area, 3,565 Square Miles.

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	7,530	1,840	4,641	2.11	.52	1.07	1.23
November "	9,330	4,920	6,811	2.62	1.38	1.91	2.13
December "	7,740	3,730	6,003	2.17	1.05	1.68	1.94
January (1917)	5,530	1,990	3,057	1.55	.56	.86	.99
February	1,990	1,240	1,418	.56	.35	.40	.42
March	2,070	1,160	1,491	.58	.33	.42	.48
April	9,730	1,360	3,620	2.73	.38	1.02	1.14
May	14,880	9,200	11,851	4.17	2.58	3.32	3.83
June	19,960	6,910	12,616	5.60	1.94	3.54	3.95
July	6,810	4,010	5,345	1.91	1.12	1.50	1.73
August	3,930	1,760	2,688	1.10	.49	.75	.86
September	1,820	1,030	1,374	.51	.29	.39	.44
The year	19,960	1,030	5,025	5.60	.29	1.41	19.14

South River near Powassan

Location—At "Gough's" highway bridge on the Nipissing village road 2.5 miles northwest of Powassan station and at the farm owned by Owen Gough between lots 20 and 21 and 14th and 15th concessions in the Township of Himsworth in the District of Nipissing.

Records Available—Discharge measurements from July 6, 1917, and before then at "Healey's" bridge. Daily gauge heights from March 11, 1914.

Drainage Area—294 square miles.

Gauge—Standard enamelled gauge plates 0-12 feet on the northwest corner of the left abutment. Elevation of the zero of the gauge 23.00 feet is referred to a B.M. elevation assumed 56.15 feet painted on the top of a corner of barn foundation 350 feet from the section.

Channel—Straight for about 200 feet above and 150 feet below the metering section. With high water conditions both banks are liable to overflow. The bed is largely composed of soft black muck, likely to shift under high velocities.

Discharge Measurements—Made with current meter. They are made from the bridge when velocities are high enough for good results and at other times from a boat at a section 100 feet below the bridge.

Winter Flow—Measurements made through ice in the winter. Ordinary relation between gauge heights and discharge are seriously disturbed by ice conditions, and measurements are made in the winter to determine this effect.

Accuracy—A fairly well defined rating curve has been established.

Observer—Owen Gough, Powassan.

Discharge Measurements of South River near Powassan in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Dec. 1	Murray, W. S....	115	827	1.15	29.08	956(47)	.....
1917							
Feb. 8	"	68	148	1.13	25.00	168(48)	.....
Mar. 9	"	68	128	1.00	24.66	129(49)	.....
April 13	"	125	741	1.62	28.16	764(50)	.....
May 2	"	120	1,185	1.51	30.83	1,788	.....
June 25	"	107	511	.84	25.58	432	.....
July 6	"	101	605	.55	25.75	337(53)	.....
Aug. 7	Newland, S. G...	75	547	.54	25.33	297	.....
Oct. 13	Roberts, E.....	77	545	.45	25.23	245	.....

(47) Ice on river but not at section.
(48) Ice measurement.
(49) Ice measurement.
(50) Ice on river below section.
(53) Taken at new section.

Daily Gauge Height and Discharge of South River near Powassan for 1916-7

Drainage Area, 294 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	25.54	363	27.16	710	29.03	1100	26.00	313	24.83	136	24.58	107	31.08	1250	29.91	1480	27.16	710	27.03	675	25.62	337	24.58	168
2	25.21	300	27.12	700	28.58	970	25.87	289	24.75	126	24.54	102	31.54	1380	30.78	1720	27.29	750	26.66	580	25.38	290	24.58	168
3	24.91	250	27.00	665	28.50	945	25.75	267	24.75	126	24.50	98	31.79	1450	30.62	1680	27.33	760	26.25	473	25.29	274	24.50	158
4	24.79	230	26.83	620	28.03	815	25.83	281	24.75	126	24.50	98	32.03	1520	29.95	1490	27.33	760	25.96	407	25.21	261	24.50	158
5	24.62	203	26.66	580	28.12	840	25.83	281	24.75	126	24.50	98	32.33	1600	29.41	1340	27.58	830	25.75	363	25.17	254	24.50	158
6	24.50	185	26.54	545	29.00	1090	25.75	267	24.66	116	24.41	89	31.50	1370	29.04	1240	27.62	840	25.71	355	25.25	268	24.58	168
7	24.46	179	26.41	515	28.33	900	25.75	267	24.71	121	24.46	94	30.50	1090	28.71	1150	27.29	750	25.62	337	25.29	274	24.50	158
8	24.41	172	26.33	492	28.33	900	25.66	253	24.96	153	24.50	98	30.62	1120	28.46	1080	27.25	735	27.37	770	25.21	261	24.50	158
9	24.33	161	27.19	720	29.12	1120	25.66	253	24.96	153	24.66	116	29.12	700	28.21	1010	27.58	830	28.75	1160	25.17	254	24.50	158
10	24.33	161	28.21	980	29.41	1200	25.54	233	24.87	141	24.66	116	29.16	825	27.95	935	27.29	750	29.33	1320	25.08	240	24.50	158
11	24.29	155	27.95	905	29.79	1310	25.50	227	24.66	116	24.62	111	28.91	865	27.62	840	27.00	665	31.16	1830	25.08	240	24.46	153
12	24.25	150	27.54	790	29.87	1330	25.41	214	24.37	85	24.62	111	28.78	940	27.50	805	26.79	610	30.16	1550	24.92	215	24.42	148
13	24.33	161	27.21	700	29.91	1340	25.37	208	24.25	74	24.58	107	28.29	860	27.46	795	26.54	545	29.79	1450	23.92	90	24.37	141
14	25.03	269	26.83	595	30.08	1390	25.33	202	24.25	74	24.58	107	28.12	870	27.25	735	26.83	620	29.21	1290	25.67	347	24.29	131
15	25.25	307	26.62	515	29.87	1330	25.25	191	24.37	85	24.58	107	28.00	890	27.04	680	27.08	690	29.54	1380	26.92	645	24.25	126
16	25.33	322	26.53	493	29.54	1240	25.16	179	24.41	89	24.58	107	27.71	865	26.96	655	26.79	610	29.08	1250	26.83	620	24.25	126
17	25.58	371	26.29	436	29.37	1190	25.16	179	24.46	94	24.66	116	27.87	910	26.87	630	26.50	535	28.21	1010	26.38	505	24.25	126
18	26.00	457	26.25	427	29.08	1110	25.16	179	24.50	98	24.66	116	28.91	920	26.58	555	26.16	452	28.54	1100	26.00	416	24.16	115
19	25.91	438	26.12	398	28.54	960	25.08	168	24.50	98	24.66	116	30.37	1610	26.25	473	26.00	416	30.42	1620	25.75	363	24.16	115
20	26.95	685	26.08	369	28.21	865	25.00	158	24.58	107	24.66	116	32.58	2230	26.37	505	25.95	405	29.29	1310	26.00	416	24.16	115
21	27.75	905	25.87	327	27.95	795	24.91	146	24.58	107	24.66	116	34.04	2640	26.33	492	25.91	396	28.67	1130	25.75	363	24.20	120
22	28.41	1120	25.79	311	27.33	620	25.00	158	24.58	107	24.75	126	34.20	2680	26.33	492	25.91	396	27.92	925	25.42	298	24.20	120
23	28.08	1010	25.66	287	27.25	600	25.00	158	24.66	116	24.79	131	33.29	2430	27.99	945	25.83	379	27.25	735	25.21	261	24.16	115
24	27.79	915	26.03	359	27.04	545	25.00	158	24.58	107	25.87	246	32.49	2200	28.99	945	25.79	371	27.08	690	25.17	254	24.16	115
25	27.62	865	26.16	365	26.87	505	25.00	158	24.58	107	27.03	423	31.91	2040	28.75	1160	25.62	337	26.83	620	25.29	274	24.16	115
26	27.87	940	26.21	375	26.71	463	25.00	158	24.58	107	27.83	555	31.66	1970	28.33	1040	25.50	313	26.54	545	25.50	313	24.16	115
27	28.00	980	26.16	365	26.75	473	24.87	141	23.58	107	30.99	1360	31.58	1950	27.91	920	25.54	321	26.46	525	25.29	274	24.16	115
28	27.96	970	26.66	475	26.62	443	24.75	126	24.58	107	32.50	1720	30.95	1770	27.62	840	25.46	295	26.21	463	25.56	325	24.20	120
29	27.71	895	27.66	740	26.46	407	24.75	126	.....	.....	31.33	1320	30.50	1650	27.41	780	25.45	294	25.92	398	25.54	321	24.37	141
30	27.33	785	29.37	1190	26.21	355	24.75	126	.....	.....	30.46	1080	30.00	1510	27.25	735	27.04	680	25.92	398	25.38	290	24.87	208
31	27.29	775	.....	.....	26.08	329	24.75	126	.....	.....	30.33	1040	.....	....	27.16	710	.....	.....	25.67	371	25.12	246	.....	....

Monthly Discharge of South River near Powassan for 1916-7

Drainage Area, 294 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October... (1916)	1,120	150	506	3.81	.51	1.72	1.98
November. "	1.190	287	565	4.05	.98	1.92	2.14
December "	1,390	329	886	4.72	1.12	3.01	3.47
January .. (1917)	313	126	200	1.06	.43	.68	.78
February.....	153	74	111	.52	.25	.38	.40
March.....	1.720	89	331	5.84	.30	1.13	1.30
April.....	2,680	700	1.470	9.12	2.38	5.00	5.58
May.....	1.720	473	931	5.84	1.61	3.17	3.65
June.....	840	294	568	2.86	1.00	1.93	2.15
July.....	1,830	337	872	6.22	1.15	2.97	3.42
August.....	645	90	316	2.19	.31	1.07	1.23
September.....	208	115	140	.71	.39	.48	.54
The year.....	2.680	74	577	9.12	.25	1.96	26.63

Spanish River at Webbwood

Location—On the highway bridge about one and a half miles east of Webbwood station on the Sault branch of the C.P.R. and eight miles below Espanola Mills.

Records Available—Gauge readings daily from February 1, 1917. Discharge measurements monthly from January, 1917.

Drainage Area—4,340 square miles.

Gauge—Vertical steel staff gauge 0-9 feet on third pier from north abutment and 9-12 feet on fourth pier.

Channel—The approach to the bridge is straight for 300 feet and below the bridge for one-half mile.

Discharge Measurements—During the open water season the measurements are made from the bridge and during the winter seasons the measurements are made from the ice about half a mile below the bridge.

Winter Flow—The relation between gauge readings and discharge is seriously disturbed during the winter months, but the ice effect is shown to be regular in direction.

Regulation—The Spanish River Pulp and Paper Co. operate a plant at Espanola, eight miles above the section, which is partly shut down on Sundays, accounting for the fluctuation in gauge heights at the week ends. This company also has storage dams at various locations on the headwaters of this river for conserving the flow for both lumbering and power purposes.

Accuracy—The curve is based on 15 discharge measurements, the majority being made during the current year.

Observer—D. J. Stewart, Webbwood.

Discharge Measurements of Spanish River at Webbwood in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Nov. 18....	Murray, W. S..	206	3,440	1.31	38.88	4,792	.....
1917	" ..						
Jan. 11....	" ..	190	3,119	.95	37.73	2,870	.....
" 29....	" ..	345	2,612	1.02	37.56	2,676(7)	.....
Feb. 16....	" ..	335	2,692	1.00	37.54	2,701(8)	.....
Mar. 14....	" ..	155	2,895	.90	38.08	2,617	.....
Apr. 17....	" ..	202	3,708	1.84	40.20	6,829(10)	.....
May 15....	" ..	238	4,340	2.37	42.33	10,304	.....
June 21....	" ..	247	4,846	3.20	44.40	15,487	.....
July 19....	" ..	220	4,045	2.25	41.67	9,105	.....
Aug. 18....	Newland, S. G...	203	3,384	1.25	38.92	4,223	.....
Sept. 17....	Roberts, E.....	197	3,238	.77	37.75	2,494	.....
Oct. 17....	"	162	3,060	.78	37.44	2,395	.....

(7) Ice measurement taken 600 feet below regular section.
(8) Ice measurement taken 600 feet below regular section.
(10) Floating ice on control.

Daily Gauge Height and Discharge of Spanish River at Webbwood for 1916-7

Drainage Area, 4,340 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge	Gauge Ht.	Dis-charge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	37.16	1750	40.33	6630	38.51	3620	39.94	5940	37.83	2220	38.08	2570	38.33	3340	42.83	11620	45.75	19200	42.58	11070	40.08	6180	38.42	3480
2	37.55	2250	40.18	6360	38.35	3380	39.79	5670	37.91	2060	38.08	2570	39.75	5600	43.33	12780	45.58	18720	42.16	10190	40.25	6490	38.25	3230
3	37.51	2190	40.11	6230	37.69	2440	39.79	5670	37.75	1980	37.75	2120	40.00	6040	43.58	13380	45.41	18250	41.92	9680	39.75	5600	37.58	2290
4	37.47	2140	40.14	6290	37.98	2850	39.56	5270	36.50	510	36.42	620	41.16	8150	42.08	10020	46.58	21520	41.50	8820	39.50	5170	38.25	3230
5	37.51	2190	39.58	5300	38.25	3230	39.56	5270	37.33	1360	37.23	1600	41.91	9660	43.75	13800	47.33	23620	41.00	7850	38.42	3480	38.50	3600
6	37.55	2250	39.88	5830	38.35	3380	39.56	5270	37.91	2060	37.83	2220	42.00	9850	42.50	10900	47.33	23620	40.58	7080	39.67	5460	38.83	4100
7	37.43	2090	39.88	5830	38.57	3710	39.56	5270	37.83	1960	37.50	1800	41.83	9490	41.75	9320	47.33	23620	40.16	6330	38.83	4100	38.58	3720
8	37.11	1690	40.11	6230	39.08	4480	39.32	4870	37.75	1860	37.83	2220	41.66	9140	41.25	8320	46.75	22000	40.25	6490	39.08	4480	38.50	3600
9	36.96	1510	40.11	6230	39.96	5960	38.78	4020	37.66	1750	37.91	2330	42.66	11240	41.25	8320	46.58	21520	40.16	6330	39.33	4880	38.00	2880
10	37.16	1750	39.96	5960	40.40	6760	38.38	3420	37.66	1750	37.83	2220	42.75	11440	41.08	8000	46.50	21300	40.08	6180	39.52	5200	38.16	3100
11	37.47	2140	40.11	6230	40.84	7560	37.99	2870	36.42	530	36.59	770	42.16	10190	40.91	7680	46.50	21300	39.83	5730	38.83	4100	38.41	3460
12	37.47	2140	39.64	5400	40.99	7830	37.99	2860	37.16	1280	37.66	2000	41.83	9490	40.83	7530	46.58	21520	40.33	6630	39.00	4350	38.16	3100
13	37.23	1840	40.17	6340	41.20	8230	37.98	2850	37.75	1980	38.08	2570	41.66	9140	40.16	6330	46.58	21520	41.00	7850	39.08	4480	37.75	2530
14	37.32	1950	39.79	5670	41.61	9040	37.96	2830	37.66	1870	38.08	2570	41.33	8480	42.75	11440	46.58	21520	41.50	8820	39.08	4480	37.75	2530
15	37.69	2450	39.79	5670	41.47	8760	37.96	2820	37.75	1980	38.04	2520	40.33	6680	42.33	10540	46.50	21300	41.17	8170	38.75	3980	37.75	2530
16	37.93	2780	39.64	5400	41.20	8230	37.95	2810	37.66	1870	38.04	2520	40.91	7680	42.16	10190	46.33	20020	41.17	8170	38.83	4100	37.16	1750
17	37.76	2540	39.48	5140	40.26	6500	37.94	2800	37.66	1870	38.08	2570	40.16	6330	42.16	10190	46.00	19900	41.33	8480	38.92	4230	37.75	2530
18	37.23	1840	39.32	4870	40.62	7160	37.93	2790	36.40	510	36.67	850	40.25	6490	42.00	9850	45.50	18500	41.50	8820	38.83	4100	37.83	2640
19	37.07	1660	39.32	4870	40.55	7030	37.92	2770	36.09	294	38.00	2460	40.41	6780	41.83	9490	45.33	18020	41.58	8980	38.42	3480	38.58	3720
20	37.90	2740	39.09	4500	40.55	7030	37.91	2760	37.25	1380	38.00	2460	40.50	6940	41.16	8150	44.75	16400	41.67	9160	38.33	3340	38.33	3340
21	37.94	2800	38.93	4240	40.55	7030	37.91	2750	37.75	2120	38.00	2460	41.41	8640	41.83	9490	44.33	15280	42.08	10020	38.50	3600	38.25	3230
22	37.40	2050	38.93	4240	40.40	6760	37.90	2740	37.83	2220	37.91	2330	42.41	10710	42.33	10540	43.41	12970	41.58	8980	38.33	3340	38.16	3100
23	39.34	4900	38.85	4120	40.40	6760	37.89	2730	37.83	2220	37.66	510	43.75	13800	42.16	10190	43.08	12180	41.67	9160	38.42	3480	37.16	1750
24	37.84	2640	38.78	4020	40.18	6360	37.88	2720	37.91	2330	37.91	2330	44.50	15720	43.00	12000	42.75	11440	41.17	8170	38.50	3600	37.83	2640
25	38.29	3290	38.78	4020	40.40	6760	37.88	2710	36.59	770	36.84	1030	44.16	14840	43.58	13380	42.25	10380	41.33	8480	38.83	4100	37.75	2530
26	39.73	5560	39.06	4440	40.03	6100	37.87	2700	38.00	2460	36.92	1120	44.00	14430	44.00	14430	41.50	8820	41.17	8170	38.08	2990	37.83	2640
27	39.81	5700	39.32	4870	39.88	5830	37.86	2690	38.08	2570	38.16	2680	43.75	13800	44.41	15490	42.08	10020	41.00	7850	38.50	3600	37.92	2770
28	39.73	5560	39.25	4750	39.88	5830	37.85	2680	38.16	2680	38.25	2810	43.58	13380	44.91	16850	42.25	10380	41.17	8170	38.58	3720	37.83	2640
29	40.62	7160	39.25	4750	40.62	7160	37.85	2680	.....	.....	38.16	2680	42.83	11620	45.41	18250	42.58	11070	40.50	6940	38.67	3860	37.92	2770
30	40.55	7030	39.32	4870	40.48	6900	37.84	2660	.....	.....	38.33	2920	42.66	11240	45.58	18720	42.75	11440	40.67	7250	38.58	3720	37.16	1750
31	40.10	6220	.....	.....	40.48	6900	37.84	2650	.....	.....	38.33	2920	.....	.....	45.83	19420	.....	.....	39.83	5730	38.50	3600	.....	.....

Monthly Discharge of Spanish River at Webbwood for 1916-7

Drainage Area, 4,340 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	7,160	1,510	3,058	1.65	.35	.70	.81
November "	6,630	4,020	5,310	1.53	.93	1.22	1.36
December "	9,040	2,440	6,115	2.08	.56	1.41	1.63
January (1917)	5,940	2,650	3,501	1.37	.61	.81	.93
February	2,220	294	1,730	.51	.07	.40	.42
March	2,920	510	2,108	.67	.12	.49	.56
April	15,720	3,340	9,678	3.62	.77	2.23	2.49
May	19,420	6,330	11,504	4.47	1.46	2.65	3.06
June	23,620	8,820	17,605	5.44	2.03	4.06	4.53
July	11,070	5,730	8,056	2.55	1.32	1.86	2.14
August	6,490	2,990	4,235	1.50	.69	.98	1.13
September	4,100	1,750	2,906	.94	.40	.67	.75
The year	23,620	294	6,327	5.44	.07	1.46	19.79

Sturgeon River at Smoky Falls

Location—At the highway bridge at Smoky Falls Post Office, and two miles above the Smoky Falls, Township of Springer, Nipissing District.

Records Available—Discharge measurements from August, 1912. Daily gauge heights, January 12 to 31, 1914, and from March 15, 1914.

Drainage Area—2,570 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, and attached to a wooden pile on the right, upstream side of the bridge. The zero of the gauge (elevation 32.00) is referred to a bench mark (elevation 53.47) painted on a rock on the right bank of the river, about 175 feet above the bridge.

Channel—Straight for about 700 feet above and about 1 mile below the station. The banks are fairly high, clean, sandy and not liable to overflow. The bed of the stream is composed of clay and sand, slightly shifting. The current is fast and smooth, flowing through six channels, formed by bridge piers and abutments.

Discharge Measurements—Made from the bridge during all stages.

Winter Flow—During the winter months the river is covered with ice, and measurements are made through the ice to determine the winter discharge. The relation of gauge height to discharge is seriously affected by ice.

Regulation—Dams above are used for power and log driving purposes.

Accuracy—The open water rating curve is fairly well defined. The relation of gauge height to discharge is affected during the log-driving season.

Observer—A. Pineault, Smoky Falls.

Discharge Measurements of Sturgeon River at Smoky Falls in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Nov. 4....	Murray, W. S ..	210	2,125	1.14	34.83	2,425(38)	.....
1917							
Jan. 26....	" ..	220	4,193	.47	34.33	1,982(39)	.....
Feb. 7....	" ..	220	4,137	.45	34.08	1,873(40)	.....
Mar. 19....	" ..	225	3,841	.43	33.91	1,658(41)	.....
April 21....	" ..	210	2,802	2.69	38.00	7,538(42)	.....
May 4....	" ..	210	3,293	3.70	40.41	12,184	.....
" 5....	" ..	210	3,234	3.60	40.37	11,776	.....
Oct. 19....	Roberts, E.....	193	2,063	.80	33.85	1,599	.....

(38) Reading probably affected by log drive anchored above section.
(39) Ice measurement taken 150 feet above regular section.
(40) Ice measurement taken 150 feet above regular section.
(41) Ice measurement taken 150 feet above regular section.
(42) Logs on control above section.

Daily Gauge Height and Discharge of Sturgeon River at Smoky Falls for 1916-7

Drainage Area 2,570 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	32.71	975	34.91	3160	35.66	4040	34.33	2080	34.16	1770	33.71	1500	35.20	2850	38.58	9030	37.74	7680	36.25	5300	35.21	3640	35.04	3360
2	32.87	1060	35.00	3300	35.58	3910	34.29	2040	34.08	1720	33.66	1480	35.62	3490	39.62	10690	37.62	7490	36.21	5240	35.12	3490	34.96	3240
3	32.91	1090	35.00	3300	35.41	3640	34.25	2000	34.00	1670	33.75	1520	35.58	3430	40.25	11700	37.33	7030	36.12	5090	34.96	3240	34.79	2980
4	32.91	1090	35.00	3300	35.41	3640	34.16	1930	34.00	1670	33.75	1520	35.79	3760	40.41	11960	37.62	7490	36.12	5090	34.87	3100	34.62	2750
5	32.91	1090	35.00	3300	35.33	3510	34.16	1850	34.00	1670	33.75	1520	36.08	4230	40.33	11830	38.12	8290	36.16	5160	34.83	3040	34.45	2530
6	33.00	1150	34.87	3100	35.41	3640	34.25	1920	33.91	1620	33.75	1520	36.12	4290	40.12	11490	38.08	8230	36.12	5090	34.71	2860	34.29	2350
7	32.95	1120	34.62	2750	35.50	3780	34.33	1990	34.08	1720	33.75	1520	35.91	4120	39.87	11090	38.08	8230	36.08	5030	34.71	2860	34.29	2350
8	32.91	1090	34.50	2590	35.50	3780	34.66	2320	34.08	1720	33.83	1570	35.87	4050	39.50	10500	38.16	8360	36.25	5300	34.71	2860	34.58	2690
9	32.91	1090	34.58	2690	35.79	4240	34.66	2320	34.00	1670	33.83	1570	35.79	4080	39.25	10100	38.29	8560	36.25	5300	34.58	2690	34.54	2640
10	32.91	1090	34.79	2840	35.87	4370	34.54	2190	34.00	1670	33.75	1520	35.58	3750	39.04	9760	38.37	8690	36.37	5490	34.58	2690	34.58	2690
11	32.79	1020	34.91	3000	35.62	3970	34.50	2150	34.00	1670	33.75	1520	35.41	3640	38.87	9490	38.21	8440	36.37	5490	34.58	2690	34.66	2800
12	32.81	1030	34.91	3000	35.66	4040	34.50	2150	33.91	1620	33.75	1520	35.16	3240	38.79	9360	37.79	7760	36.37	5490	34.67	2810	34.75	2920
13	32.83	1040	34.91	3000	35.58	3910	34.58	2230	33.91	1620	33.75	1520	35.12	3330	38.58	9030	37.79	7760	36.67	5970	34.67	2810	34.71	2860
14	32.87	1060	34.83	2890	35.62	3970	34.58	2230	33.91	1620	33.79	1540	34.91	3160	38.54	8960	37.96	8040	37.00	6500	34.63	2760	34.62	2750
15	32.91	1090	34.71	2730	35.71	4120	34.50	2150	33.91	1620	33.83	1570	35.00	3300	38.16	8360	38.00	8100	37.17	6770	34.58	2690	34.58	2690
16	32.91	1090	34.50	2470	35.58	3910	34.50	2150	33.91	1620	33.83	1570	35.12	3490	37.87	7890	38.00	8100	37.33	7030	34.67	2810	34.41	2480
17	33.12	1250	34.41	2370	35.37	3410	34.50	2150	33.83	1570	33.83	1570	35.50	4100	37.62	7490	37.87	7890	37.25	6900	34.67	2810	34.25	2300
18	33.16	1280	34.16	2110	35.12	3020	34.58	2230	33.83	1570	33.91	1620	35.87	4690	37.54	7360	37.83	7830	37.79	7760	34.71	2860	34.12	2170
19	33.25	1350	34.16	2110	35.00	2850	34.41	2060	33.75	1520	33.91	1620	36.41	5560	37.46	7240	37.79	7760	36.67	5970	34.67	2810	33.96	2010
20	33.66	1720	34.08	2030	34.83	2630	34.41	2060	33.75	1520	33.95	1640	37.20	6820	37.37	7090	37.71	7640	36.53	5700	34.79	2980	33.83	1900
21	34.37	2420	33.02	1680	34.75	2530	34.41	2060	33.75	1520	34.00	1670	37.95	8020	37.25	6900	37.33	7030	36.29	5360	34.92	3170	33.71	1810
22	34.66	2960	33.54	1630	34.66	2430	34.50	2150	33.75	1520	34.00	1670	38.00	8100	37.25	6900	37.12	6690	36.17	5170	34.88	3110	33.62	1740
23	34.66	2960	34.16	2110	34.66	2430	34.41	2060	33.75	1520	34.04	1690	37.91	7960	38.16	8360	37.04	6560	36.12	5090	34.83	3040	33.62	1740
24	34.66	2960	34.71	2730	34.75	2530	34.41	2060	33.66	1480	34.20	1800	37.83	7830	39.53	10550	36.79	6160	36.12	5090	34.83	3040	33.58	1720
25	34.66	2960	34.54	2520	34.66	2430	34.41	2060	33.58	1440	34.25	1840	37.83	7830	39.58	10630	36.62	5890	36.04	4960	34.92	3170	33.62	1740
26	34.75	3090	34.41	2370	34.58	2340	34.33	1900	33.66	1480	34.25	1840	38.16	8360	39.46	10440	36.50	5700	35.88	4710	34.83	3040	33.67	1780
27	34.83	3220	34.50	2470	34.54	2290	34.25	1840	33.66	1480	34.54	2090	38.58	9030	39.25	10100	36.62	5890	35.79	4560	34.83	3040	33.67	1780
28	34.79	3160	34.87	2950	34.50	2250	34.25	1840	33.66	1480	34.83	2390	38.66	9160	38.95	9620	36.75	6100	35.62	4290	34.92	3170	33.75	1840
29	34.83	3220	35.16	3240	34.41	2160	34.25	1840	.....	....	34.91	2480	38.54	8960	38.83	9430	36.46	5640	35.54	4160	34.83	3040	33.83	1900
30	34.83	3220	35.58	3910	34.33	2080	34.25	1840	.....	....	34.83	2390	38.50	8900	38.50	8900	36.37	5490	35.56	4200	34.87	3100	33.83	1900
31	34.83	3220	.....	....	34.33	2080	34.16	1770	.....	....	34.83	2390	.....	....	38.16	8360	.....	....	35.29	3760	34.46	2540	.....	....

Monthly Discharge of Sturgeon River at Smoky Falls for 1916-7

Drainage Area, 2,579 Square Miles

Month	Discharge in Second-feet.			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area.
October... (1916)	3,220	975	1,812	1.25	.38	.71	.82
November "	3,910	1,630	2,722	1.52	.63	1.06	1.18
December "	4,370	2,080	3,224	1.70	.81	1.25	1.44
January .. (1917)	2,320	1,770	2,052	.90	.69	.80	.92
February	1,770	1,440	1,599	.69	.56	.62	.65
March.....	2,480	1,480	1,715	.96	.58	.67	.77
April.....	9,160	2,850	5,451	3.56	1.11	2.12	2.37
May.....	11,960	6,900	9,375	4.65	2.68	3.65	4.21
June	8,690	5,490	7,351	3.38	2.14	2.86	3.19
July.....	7,760	3,760	5,388	3.02	1.46	2.10	2.42
August	3,640	2,690	2,966	1.42	1.05	1.15	1.33
September.....	3,360	1,720	2,347	1.31	.67	.91	1.02
The year	11,960	975	3,845	4.65	.38	1.50	20.30

Vermilion River near Whitefish

Location—At the C.P.R. bridge, two miles east of the Whitefish station, Township of Graham, District of Sudbury.

Records Available—Discharge measurements from August, 1913. Daily gauge heights from June 11, 1915.

Drainage Area—1,580 square miles.

Gauge—Vertical steel staff with enamelled face graduated in feet and inches attached to pile at left abutment of old highway bridge. Zero of the gauge is at an elevation of 25.00 referred to a bench mark elevation 38.39 painted on rock on right bank 15 feet above section.

Channel and Control—Straight for about 300 feet above and 700 feet below the station. Both banks are high, rocky and wooded, and not liable to overflow. Bed of stream is rocky and permanent, current is swift, two channels existing at all stages. At low stages log jams occur at the rapids, causing backwater on the gauge.

Discharge Measurements—Made from the bridge with current meter.

Winter Flow—The relation between the gauge heights and discharge is seriously affected by ice under some conditions.

Accuracy—The relation between gauge heights and discharge have been so seriously disturbed by ice and log conditions during the past year that reliable estimates of flow have not been deemed possible on the information available.

Observer—A. Boucher, Whitefish.

Discharge Measurements of Vermilion River near Whitefish in 1917

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Mar. 15	Murray, W. S..	90	787	.91	26.16	721(24)	.....
April 18	" ..	115	1,194	2.75	30.75	3,285(25)	.....
May 17	" ..	115	1,229	4.72	30.66	5,804(26)	.....
Oct. 18	Roberts, E.....	165	1,762	.10	27.00	188	.....

(24) Reading taken 100 yards below gauge on C.P.R. bridge. Conditions unfavorable for good results.
(25) Same remarks as (24). Surface velocities recorded, and co-efficient applied.
(26) Same remarks as (24).

Daily Gauge Height and Discharge of Vermilion River near Whitefish for 1916-7

Drainage Area, 1,580 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	26.16	.....	27.75	.....	28.66	.....	28.50	.....	27.91	.....	26.08	.....	26.50	.....	32.08	.....	32.08	.....	29.83	.....	29.83	.....	28.33	.....
2	26.16	.....	27.75	.....	28.75	.....	28.41	.....	27.91	.....	26.08	.....	26.91	.....	32.16	.....	32.33	.....	29.91	.....	29.75	.....	28.33	.....
3	26.16	.....	27.83	.....	28.75	.....	28.33	.....	27.91	.....	26.08	.....	27.66	.....	32.33	.....	32.33	.....	30.00	.....	29.67	.....	28.25	.....
4	26.16	.....	27.83	.....	28.83	.....	28.33	.....	27.91	.....	26.08	.....	27.75	.....	32.41	.....	32.41	.....	29.91	.....	29.50	.....	28.25	.....
5	26.16	.....	27.00	.....	28.83	.....	28.16	.....	27.91	.....	26.08	.....	28.41	.....	32.50	.....	32.41	.....	29.83	.....	29.50	.....	28.17	.....
6	26.16	.....	28.16	.....	28.91	.....	28.16	.....	27.83	.....	26.16	.....	28.58	.....	32.33	.....	32.33	.....	29.75	.....	29.50	.....	28.16	.....
7	26.25	.....	28.25	.....	29.08	.....	28.16	.....	27.83	.....	26.16	.....	28.75	.....	32.16	.....	32.16	.....	29.75	.....	29.42	.....	28.16	.....
8	26.25	.....	28.33	.....	29.16	.....	28.08	.....	27.75	.....	26.16	.....	29.41	.....	31.91	.....	31.33	.....	29.75	.....	29.42	.....	28.08	.....
9	26.25	.....	28.72	.....	29.75	.....	28.08	.....	27.75	.....	26.16	.....	29.91	.....	31.66	.....	31.33	.....	29.75	.....	29.42	.....	28.00	.....
10	26.25	.....	29.53	.....	30.66	.....	28.00	.....	27.66	.....	26.16	.....	30.25	.....	31.50	.....	31.33	.....	29.75	.....	29.42	.....	28.00	.....
11	26.25	.....	29.51	.....	30.83	.....	27.91	.....	27.66	.....	26.16	.....	30.66	.....	31.00	.....	31.25	.....	29.83	.....	29.33	.....	28.00	.....
12	26.25	.....	29.66	.....	31.00	.....	27.91	.....	27.58	.....	26.08	.....	30.91	.....	31.00	.....	31.16	.....	29.83	.....	29.33	.....	28.00	.....
13	26.25	.....	29.83	.....	31.00	.....	27.83	.....	27.58	.....	26.08	.....	30.75	.....	30.91	.....	31.16	.....	29.83	.....	29.33	.....	28.00	.....
14	26.25	.....	29.66	.....	30.16	.....	27.83	.....	27.50	.....	26.16	.....	30.33	.....	30.83	.....	31.08	.....	29.91	.....	29.33	.....	28.00	.....
15	26.25	.....	29.66	.....	30.58	.....	27.83	.....	27.50	.....	26.16	.....	30.06	.....	30.75	.....	31.00	.....	30.25	.....	29.33	.....	27.92	.....
16	26.33	.....	29.51	.....	30.33	.....	27.83	.....	27.50	.....	26.16	.....	29.41	.....	30.66	.....	30.91	.....	30.50	.....	29.33	.....	27.83	.....
17	26.33	.....	29.53	.....	30.91	.....	27.91	.....	27.58	.....	26.16	.....	29.75	.....	30.66	.....	30.91	.....	30.67	.....	29.33	.....	27.75	.....
18	26.33	.....	29.35	.....	30.00	.....	27.91	.....	27.33	.....	26.08	.....	30.75	.....	30.58	.....	30.83	.....	30.83	.....	29.33	.....	27.41	.....
19	26.41	.....	29.35	.....	29.83	.....	27.91	.....	27.16	.....	26.08	.....	31.75	.....	30.58	.....	30.66	.....	30.83	.....	29.25	.....	27.25	.....
20	26.41	.....	29.35	.....	28.33	.....	27.91	.....	27.08	.....	26.16	.....	32.50	.....	30.58	.....	30.25	.....	30.83	.....	29.17	.....	27.25	.....
21	26.58	.....	29.33	.....	28.75	.....	27.83	.....	26.91	.....	26.16	.....	32.33	.....	30.58	.....	30.16	.....	30.75	.....	29.00	.....	27.16	.....
22	26.75	.....	29.16	.....	28.75	.....	27.83	.....	26.75	.....	26.16	.....	32.83	.....	30.75	.....	30.08	.....	30.67	.....	28.92	.....	27.16	.....
23	26.08	.....	29.08	.....	28.75	.....	27.83	.....	26.58	.....	26.25	.....	33.83	.....	31.41	.....	30.00	.....	30.58	.....	28.50	.....	27.16	.....
24	27.08	.....	29.08	.....	28.75	.....	27.83	.....	26.41	.....	26.25	.....	33.50	.....	31.75	.....	29.91	.....	30.67	.....	28.00	.....	27.16	.....
25	27.25	.....	29.08	.....	28.75	.....	27.83	.....	26.25	.....	26.25	.....	33.25	.....	32.91	.....	29.83	.....	30.58	.....	28.00	.....	27.16	.....
26	27.25	.....	28.41	.....	28.66	.....	27.83	.....	26.25	.....	26.25	.....	33.16	.....	32.91	.....	29.75	.....	30.50	.....	28.50	.....	27.16	.....
27	27.33	.....	28.66	.....	28.66	.....	28.00	.....	26.16	.....	26.25	.....	32.83	.....	32.75	.....	29.66	.....	30.42	.....	28.42	.....	27.16	.....
28	27.66	.....	28.66	.....	28.66	.....	28.00	.....	26.16	.....	26.33	.....	32.50	.....	32.66	.....	29.66	.....	30.42	.....	28.42	.....	27.16	.....
29	27.66	.....	28.66	.....	28.66	.....	28.00	.....	.....	.....	26.33	.....	32.33	.....	32.58	.....	29.58	.....	30.17	.....	28.33	.....	27.16	.....
30	27.75	.....	28.66	.....	28.66	.....	28.00	.....	.....	.....	26.33	.....	32.25	.....	32.50	.....	29.75	.....	29.92	.....	28.33	.....	27.08	.....
31	27.75	.....	.....	.....	28.50	.....	27.91	.....	.....	.....	26.33	.....	.....	.....	32.33	.....	.....	.....	29.83	.....	28.33	.....	.....	.....

Wanapitei River at McVittie's

Location—Along the C. N. Ry, line, twenty miles south of the Town of Sudbury, and about two miles up stream from McVittie's power house, and 300 feet above Water Falls, southeast corner of the Township of Secord, District of Sudbury (Mining Division).

Records Available—Discharge measurements from September, 1916. Daily gauge heights from October 1, 1916.

Drainage Area—1,190 square miles.

Gauge—Chain gauge on left bank fifty feet above section. When the gauge reads zero the elevation of the water is 99.00, referred to a B.M. (elev. 105.15) on a stump just below section.

Channel—Straight for about 400 feet above and 300 feet below the station. Banks are low, rocky, and wooded, and liable to overflow. The bed of the stream is composed of clay, practically permanent; the current is slow.

Control—During log driving periods logs may jam at the head of the falls, which is 300 feet below station. The jam may cause a back water affect at the gauging station.

Discharge Measurements—Made from boat with a small Price current meter.

Observer—J. S. McVittie, McVittie's Siding.

Discharge Measurements of Wanapitei River at McVittie's in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Nov. 1....	Murray, W. S. ..	151	2,221	.36	101.23	791	.....
1917							
Jan. 12....	" ..	150	2,109	.32	101.10	684 (4)	.....
Feb. 21....	" ..	48	288	2.21	100.91	638 (5)	.....
April 27....	" ..	156	2,432	.75	102.50	1,833 (6)	.....
May 16....	" ..	157	2,725	1.31	104.41	3,577	.....
Oct. 31....	Roberts, E.....	158	2,359	.65	102.00	1,530	.....

(4) Ice measurement.
(5) Ice measurement taken 400 feet below regular section.
(6) Log drive may affect.

Daily Gauge Height and Discharge of Wanapitei River at McVittie's for 1916-7

Drainage Area, 1,190 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	100.83	650	101.25	925	102.02	1480	101.33	780	101.16	670	100.54	266	101.04	590	102.79	2100	.....	.....	104.25	3420	.....	.....	103.87	3050
2	100.66	540	101.21	895	101.91	1400	101.33	780	101.02	580	100.50	240	101.00	565	103.46	2670	.....	.....	104.12	3290	.....	.....	103.00	2280
3	100.56	474	101.16	865	101.87	1370	101.29	755	100.94	525	100.50	240	102.29	1460	103.79	2970	.....	.....	104.04	3210	.....	.....	102.92	2210
4	100.71	570	101.12	840	101.83	1340	101.25	725	100.81	440	100.52	253	102.79	1850	103.50	2710	.....	.....	103.87	3050	.....	.....	102.80	2100
5	100.62	515	101.04	785	101.83	1340	101.27	740	100.96	540	100.41	186	103.00	2020	103.00	2280	.....	.....	103.75	2940	102.10	1540	102.67	2000
6	100.64	525	101.02	775	101.83	1340	101.33	780	100.89	494	100.41	186	102.91	1950	102.83	2130	.....	.....	103.54	2750	102.08	1530	101.83	1340
7	100.62	515	101.04	785	101.83	1340	101.33	780	100.83	455	100.41	186	102.66	1750	102.91	2200	.....	.....	103.41	2630	101.75	1280	101.85	1360
8	100.64	525	100.85	660	101.79	1310	101.25	725	100.91	505	100.39	174	102.29	1460	103.33	2560	.....	.....	103.33	2560	101.31	965	101.89	1390
9	100.91	700	100.87	675	102.62	1960	101.23	715	100.91	505	100.33	138	102.12	1340	103.41	2630	.....	.....	103.16	2410	101.40	1030	101.87	1370
10	100.91	700	101.35	995	103.04	2220	101.16	670	100.80	435	100.54	266	101.83	1120	103.71	2900	.....	.....	102.75	2060	101.42	1040	101.75	1280
11	100.89	690	101.43	1050	102.87	2080	101.12	645	101.16	670	100.50	240	101.79	1160	103.75	2940	.....	.....	102.50	1860	101.44	1060	101.73	1270
12	100.91	700	101.31	965	102.50	1780	101.08	615	101.09	625	100.52	253	101.48	945	103.91	3080	.....	.....	102.83	2130	101.42	1040	101.66	1220
13	100.93	715	101.21	895	102.00	1400	101.06	605	100.98	550	100.50	240	101.35	855	104.00	3170	.....	.....	103.58	2780	101.71	1250	101.71	1250
14	101.03	780	101.14	850	101.64	1130	101.06	605	101.06	605	100.46	216	101.12	775	104.08	3250	.....	.....	103.75	2940	101.83	1340	101.67	1220
15	101.10	825	101.04	785	101.58	1020	101.04	590	101.58	945	100.44	204	101.21	830	104.33	3500	.....	.....	103.71	2900	102.08	1530	101.64	1200
16	101.12	840	101.00	760	101.58	1020	101.06	605	101.58	945	100.35	150	101.41	965	104.50	3690	.....	.....	103.67	2860	102.17	1600	100.54	461
17	101.12	840	100.91	700	101.62	1040	101.00	565	101.46	865	100.41	186	101.87	1370	104.37	3550	.....	.....	103.58	2780	102.23	1640	101.04	785
18	101.18	875	100.79	625	101.60	1030	101.02	580	101.46	865	100.41	186	102.41	1790	104.66	3870	.....	.....	103.52	2730	102.17	1600	100.87	675
19	101.29	955	100.91	700	101.58	1020	101.06	605	101.16	670	100.39	174	102.91	2200	105.88	5270	.....	.....	103.54	2750	102.10	1540	100.70	565
20	101.39	1020	101.12	840	101.58	1020	101.00	565	101.16	670	100.41	186	104.12	3290	.....	.....	.....	.....	103.50	2710	102.10	1540	100.70	565
21	102.00	1470	101.08	810	101.52	975	101.00	565	100.96	540	100.43	198	105.08	4350	.....	.....	.....	.....	103.44	2660	102.04	1500	100.68	550
22	101.87	1370	.....	.....	101.46	930	101.00	565	101.00	565	100.45	210	104.79	4010	.....	.....	.....	.....	102.29	1690	101.96	1440	100.70	565
23	101.64	1200	101.12	840	101.43	910	101.00	565	100.87	480	.....	.....	103.96	3130	.....	.....	.....	.....	103.12	2380	101.75	1280	100.68	550
24	101.21	895	101.54	1130	101.41	895	100.89	494	100.87	480	.....	.....	102.79	2100	.....	.....	.....	.....	103.00	2280	101.86	1360	100.70	565
25	101.00	760	101.62	1180	101.37	805	101.21	700	100.83	455	.....	.....	102.37	1760	.....	.....	.....	.....	102.83	2130	102.08	1530	100.68	550
26	100.94	720	101.62	1180	101.35	790	101.33	780	100.79	429	101.58	945	102.25	1660	.....	.....	.....	.....	102.75	2060	.....	.....	100.72	580
27	101.12	840	101.56	1140	101.37	805	101.27	740	100.62	318	.....	.....	102.50	1860	.....	.....	.....	.....	.....	.....	.....	.....	100.75	595
28	101.21	895	101.56	1140	101.39	820	101.23	715	100.46	216	.....	.....	102.37	1760	.....	.....	.....	.....	.....	.....	.....	.....	100.75	595
29	101.12	840	101.66	1220	101.39	820	101.21	700	.....	.....	101.46	865	102.33	1720	.....	.....	104.25	3420	.....	.....	.....	.....	100.77	610
30	101.16	865	101.91	1400	101.35	790	101.21	700	.....	.....	101.29	755	102.46	1830	.....	.....	104.46	3650	.....	.....	.....	.....	100.77	610
31	101.21	895	.....	.....	101.35	790	101.16	670	.....	.....	101.16	670	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Monthly Discharge of Wanapitei River at McVittie's for 1916-7

Drainage Area, 1,190 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October...(1916)	1,470	474	797	1.24	.40	.67	.77
November "	1,400	625	911	1.18	.53	.77	.86
December "	2,220	790	1,193	1.87	.66	1.00	1.15
January ..(1917)	780	444	665	.66	.42	.56	.65
February	945	216	573	.79	.18	.48	.50
March.....	945	138	300	.79	.12	.25	.29
April.....	4,350	565	1,749	3.66	.47	1.47	1.64
May.....	5,270	2,100	3,025	4.43	1.76	2.54	2.93
June	3,650	3,420	3,535	3.07	2.87	2.97	3.31
July.....	3,420	1,690	2,614	2.87	1.42	2.20	2.54
August.....	1,640	965	1,364	1.38	.81	1.15	1.33
September.....	3,050	461	1,112	2.56	.39	.93	1.04
The year.....	5,270	1.38	1,486	4.43	.12	1.25	16.95

Regular Stations

NORTH-WESTERN ONTARIO DISTRICT

River	Location	Drainage Area Sq. Miles	Township	District
Eagle	at Eagle River	970		Kenora
English	at Caribou Falls	21,600		"
"	at Ear Falls	11,700		"
"	at Manitou Falls	14,600		"
"	at Oak Falls	15,570		"
Footprint	at Rainy Lake Falls	590		Rainy River
Manitou	at Devil's Cascades	435		"
Seine	at Skunk Rapids	2,300		"
Turtle	at Mountain Rapids	1,760		"
Wabigoon	at Quibell	2,400		Kenora
"	at Wabigoon Falls	3,120		"
Winnipeg	at Whitedog Falls	27,135		"

Eagle River at Eagle River

Location—At the highway bridge 1,000 feet south of the C.P. Ry. crossing, in the Township of Aubrey, District of Kenora. This river is a tributary of the Wabigoon River.

Records Available—Discharge measurements from January, 1914. Daily gauge heights from February 12, 1914.

Drainage Area—970 square miles.

Gauge—Vertical staff with enamelled face screwed to a 2 x 4 inch scantling, which is nailed to the south side of the bridge crib near the south-east corner, and next to the left bank of the river. The zero on the gauge (elev. 1,172.99) is referred to a bench mark (elev. 1,176.56, C.P.R. datum) painted on a point of rock on the left bank a few feet south-west of gauge.

Channel and Control—Straight for about 100 feet above the station, with the water flowing slowly. Below the section the channel is straight for about 20 feet, with the water running swiftly to the "Cascades." The banks are clean, high, rocky and not liable to overflow. The bed consists of rock, and is permanent. At extreme highwater the flow is cut up by the bridge piers, but under normal conditions the flow is all through one channel.

Discharge Measurements—Made from the highway bridge with a small Price current meter.

Winter Flow—Not affected by ice. The water at the section never freezes.

Accuracy—The station rating curve is well defined. Fluctuation in gauge heights is occasionally augmented by wind on Eagle Lake. This is in every way an exceptionally good station.

Observer—J. Nelson, Eagle River.

Discharge Measurements of Eagle River at Eagle River in 1917

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
April 27....	Carmichael, R.M.	50	149	2.59	1174.39	385	.....
" 27....	"	50	149	2.59	1174.39	384	.....
" 28....	"	50	153	2.62	1174.42	403	.....
" 28....	Taylor, J. R....	50	153	2.66	1174.43	408	.....
" 30....	"	50	158	2.74	1174.50	435	.....
" 30....	"	50	158	2.64	1174.49	419	.....
May 1....	"	50	158	2.63	1174.53	417	.....
" 2....	"	51	158	2.72	1174.57	431	.....
" 2....	"	51	158	2.76	1174.57	435	.....
" 3....	"	51	163	2.80	1174.61	459	.....
" 3....	Carmichael, R.M.	51	163	2.74	1174.65	448	.....
" 4....	"	51	163	2.86	1174.63	468	.....
" 5....	"	53	170	2.94	1174.70	500	.....

Daily Gauge Height and Discharge of Eagle River at Eagle River for 1916-7

Drainage Area, 970 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1175.37	800	1175.09	648	1174.78	518	1174.76	510	1174.68	481	1174.53	432	1174.37	386	1174.51	426	1174.87	553	1174.49	420	1174.66	474	1174.20	341
2	1175.39	810	1175.07	639	1174.80	525	1174.76	510	1174.68	481	1174.53	432	1174.37	386	1174.55	439	1174.87	553	1174.47	414	1174.64	468	1174.20	341
3	1175.39	810	1175.07	639	1174.80	525	1174.76	510	1174.68	481	1174.53	432	1174.34	378	1174.61	457	1174.82	533	1174.45	408	1174.61	457	1174.18	336
4	1175.37	800	1175.07	639	1174.78	518	1174.76	510	1174.66	474	1174.51	426	1174.34	378	1174.64	468	1174.80	525	1174.43	403	1174.61	457	1174.18	336
5	1175.37	800	1175.07	639	1174.78	518	1174.76	510	1174.64	468	1174.51	426	1174.32	372	1174.68	481	1174.76	510	1174.41	397	1174.61	457	1174.18	336
6	1175.32	780	1175.03	621	1174.80	525	1174.74	503	1174.61	457	1174.51	426	1174.32	372	1174.72	495	1174.74	503	1174.41	397	1174.59	451	1174.24	351
7	1175.32	780	1175.03	621	1174.78	518	1174.74	503	1174.61	457	1174.51	426	1174.32	372	1174.74	503	1174.72	495	1174.41	397	1174.55	439	1174.24	351
8	1175.32	780	1175.01	611	1174.78	518	1174.74	503	1174.59	451	1174.51	426	1174.32	372	1174.78	518	1174.70	488	1174.39	391	1174.51	426	1174.24	351
9	1175.32	780	1174.99	603	1174.78	518	1174.74	503	1174.59	451	1174.51	426	1174.30	367	1174.82	533	1174.68	481	1174.39	391	1174.49	420	1174.20	341
10	1175.32	780	1174.99	603	1174.78	518	1174.74	503	1174.57	445	1174.49	420	1174.30	367	1174.87	553	1174.66	474	1174.39	391	1174.45	408	1174.20	341
11	1175.28	760	1174.97	594	1174.80	525	1174.74	503	1174.57	445	1174.47	414	1174.30	367	1174.91	569	1174.64	468	1174.37	386	1174.43	403	1174.18	336
12	1175.26	750	1174.97	594	1174.80	525	1174.72	495	1174.55	439	1174.47	414	1174.28	362	1174.93	578	1174.61	457	1174.37	386	1174.41	397	1174.16	331
13	1175.26	750	1174.97	594	1174.80	525	1174.72	495	1174.55	439	1174.47	414	1174.28	362	1174.95	586	1174.59	451	1174.34	378	1174.41	397	1174.14	326
14	1175.16	705	1174.95	586	1174.80	525	1174.72	495	1174.53	432	1174.47	414	1174.28	362	1174.97	594	1174.53	432	1174.34	378	1174.39	391	1174.11	318
15	1175.16	705	1174.93	578	1174.78	518	1174.72	495	1174.53	432	1174.45	408	1174.28	362	1174.99	603	1174.51	426	1174.32	372	1174.39	391	1174.11	318
16	1175.16	705	1174.91	569	1174.78	518	1174.72	495	1174.53	432	1174.45	408	1174.28	362	1175.01	611	1174.49	420	1174.32	372	1174.37	386	1173.99	291
17	1175.16	705	1174.91	569	1174.78	518	1174.72	495	1174.51	426	1174.45	408	1174.28	362	1175.03	621	1174.51	426	1174.34	378	1174.37	386	1173.97	286
18	1175.16	705	1174.89	561	1174.78	518	1172.72	495	1174.51	426	1174.45	408	1174.28	362	1175.03	621	1174.51	426	1174.34	378	1174.34	378	1173.95	282
19	1175.14	700	1174.89	561	1174.78	518	1174.74	503	1174.51	426	1174.43	403	1174.30	367	1175.03	621	1174.53	432	1174.32	372	1174.34	378	1173.95	282
20	1175.14	700	1174.87	553	1174.78	518	1174.74	503	1174.51	426	1174.43	403	1174.30	367	1175.03	621	1174.53	432	1174.32	372	1174.32	372	1173.95	282
21	1175.14	700	1174.84	541	1174.78	518	1174.74	503	1174.53	432	1174.43	403	1174.30	367	1175.01	611	1174.51	426	1174.32	372	1174.30	367	1173.97	286
22	1175.11	685	1174.84	541	1174.80	525	1174.74	503	1174.53	432	1174.43	403	1174.32	372	1175.01	611	1174.51	426	1174.28	362	1174.28	362	1173.99	291
23	1175.11	685	1174.82	533	1174.80	525	1174.74	503	1174.55	439	1174.41	397	1174.32	372	1175.01	611	1174.51	426	1174.26	356	1174.26	356	1173.99	291
24	1175.11	685	1174.82	533	1174.78	518	1174.72	495	1174.55	439	1174.41	397	1174.34	378	1174.99	603	1174.51	426	1174.24	351	1174.28	362	1173.97	286
25	1175.09	675	1174.80	525	1174.78	518	1174.72	495	1174.53	432	1174.39	391	1174.34	378	1175.01	611	1174.51	426	1174.24	351	1174.26	356	1173.95	282
26	1175.11	685	1174.80	525	1174.78	518	1174.72	495	1174.55	429	1174.39	391	1174.37	386	1174.99	603	1174.49	420	1174.26	356	1174.24	351	1173.95	282
27	1175.09	675	1174.78	518	1174.78	518	1174.72	495	1174.55	439	1174.39	391	1174.41	397	1174.97	594	1174.49	420	1174.28	362	1174.22	346	1173.93	278
28	1175.09	675	1174.76	510	1174.78	518	1174.70	488	1174.53	432	1174.37	386	1174.43	403	1174.95	586	1174.51	426	1174.28	362	1174.22	346	1173.91	273
29	1175.09	675	1174.76	510	1174.76	510	1174.70	488	.....	...	1174.37	386	1174.45	408	1174.93	578	1174.49	420	1174.39	391	1174.20	341	1173.91	273
30	1175.07	665	1174.78	518	1174.76	510	1174.70	488	.....	...	1174.37	386	1174.47	414	1174.91	569	1174.51	426	1174.47	414	1174.20	341	1173.87	264
31	1175.09	675	.....	...	1174.76	510	1174.70	488	.....	...	1174.37	386	.....	...	1174.89	561	.....	...	1174.57	445	1174.20	341	.....	...

Monthly Discharge of Eagle River at Eagle River for 1916-7

Drainage Area, 970 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October... (1916)	810	665	729	.84	.68	.75	.86
November "	648	510	576	.67	.53	.59	.66
December "	525	510	519	.54	.53	.54	.62
January .. (1917)	510	488	499	.53	.50	.51	.59
February	481	426	445	.50	.44	.46	.48
March	432	386	409	.45	.40	.42	.48
April	414	362	375	.43	.37	.39	.44
May	621	426	562	.64	.44	58	.67
June.....	553	420	458	.57	.43	.47	.52
July	445	351	384	.46	.36	.40	.46
August	474	341	394	.49	.35	.41	.47
September	351	264	309	.36	.27	.32	.36
The year	810	264	472	.84	.27	.49	6.61

English River at Caribou Falls

Location—About 1,200 feet above Caribou Falls, the last falls on the river, and about five miles from the Winnipeg River, District of Kenora.

Records Available—Discharge measurements from May, 1914.

Drainage Area—21,600 square miles.

Gauge—Vertical staff located on the left bank of the river 25.6 feet north of a blazed jack pine, which is used as the initial point for soundings. The zero on the gauge (elevation 100.00) is referred to a bench mark (elevation 109.45) painted on a point of rock 16 feet south of the blazed jack pine.

Channel and Control—Above the station the channel takes a 90 degree curve to the right, thence following comparatively straight to the head of the falls. Both banks are high, rocky and wooded, and not liable to overflow. The bed of the stream is rocky, with large boulders or protruding shelves of rock and practically permanent. The water at the left bank is still, backflow existing at higher stages. The natural control is wide and unobstructed.

Discharge Measurements—Made from a canoe, and occasionally through ice, with a small Price current meter or from raft in winter.

Winter Flow—Ice has little effect, the channel here not freezing over every winter.

Accuracy—A well defined curve has been secured here.

English River at Ear Falls

Location—At the foot of Lac Seul, about three miles below Pine Ridge Hudson's Bay Co's. Post, and about ¼ mile above upper Ear Falls, District of Kenora.

Records Available—Discharge measurements from July, 1914. Weekly gauge heights are secured here and daily gauge heights at a gauge at Pine Ridge Post.

Drainage Area—11,700 square miles.

Gauge—Vertical staff with enamelled face screwed to a 6-inch hewn spruce post which is firmly wedged in the rock of the left bank 200 feet below a 2-inch poplar, which is painted white and used as the initial point for soundings. The zero on the gauge (elev. 115.12) is referred to a bench mark (elev. 122.75) painted on a point of rock 5 feet above the gauge.

Channel and Control—Straight for about 300 feet above and below the station, then turning to the left widens out to the top of the falls. Both banks are high, rocky and wooded, and will not overflow. The bed of the stream at the section is apparently permanent; the current sluggish, and flowing through one channel at all stages. The natural control is wide, shallow and unobstructed.

Discharge Measurements—Made from a canoe with a small Price current meter.

Winter Flow—Ice conditions have only slight effect.

Accuracy—Back flow at the left bank causes a little difficulty in making accurate discharge measurements.

Observer—Henry Busch, care of Hudson Bay Co's. Lac Seul Post, Sioux Lookout P.O.

Remarks—The very steady regimen of the English River, together with the lack of gauge readers, makes it possible and necessary to apply the gauge heights at Ear Falls to gauges at Manitou and Oak Falls. Gauge readings taken on nearly the same day were used in making up curves for the three stations, and the results obtained justify the assumptions made. No allowance is made for lag. With additional data it may be possible to extend the system to points farther down the river.

Discharge Measurements of English River at Ear Falls in 1917

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Feb. 18....	Taylor, J, R.....	328	8,205	.60	118.55	4,866(a)	.....
" 18....	"	328	8,205	.60	118.55	4,923(a)	.....
April 4....	"	326	8,133	.49	118.12	3,985	.....
" 4....	"	326	8,133	.48	118.12	3,904	.....
July 12....	"	331	8,213	.50	118.23	4,107	.....
Oct. 31....	"	332	8,505	.78	119.12	6,634	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of English River at Ear Falls for 1916-7

Drainage Area, 11,700 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	119.41	6920	.....	.....	.....	.....	.....	.....	.....	.....	118.00	3700	.....	....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	119.12	6190	118.79	5380	118.45	4590	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....
3	.....	.....	119.70	8000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	....	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	119.12	6190	.....	.....	.....	.....	118.12	3920	118.08	3840	.....	....	.....	.....	.....	.....	119.39	6920
6	.....	.....	.....	.....	119.37	6800	.....	.....	118.70	5160	118.43	4550	118.20	4070	.....	.....	118.33	4330	.....	.....	.....	.....	119.37	6870
7	.....	.....	119.70	8000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	118.95	5760	.....	.....
8	.....	.....	.....	.....	119.37	6800	119.04	5990	.....	.....	.....	.....	.....	.....	118.12	3920	118.29	4250	.....	.....	.....	.....	119.34	6920
9	.....	.....	.....	.....	.....	.....	.....	.....	118.66	5070	118.41	4500	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	.....	.....	119.62	7680	.....	.....	.....	.....	.....	.....	.....	.....	118.20	4070	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	118.16	3990	.....	.....	.....	.....	.....	.....	119.41	6980
12	.....	.....	.....	.....	119.33	6690	119.00	5890	.....	.....	.....	.....	.....	.....	.....	.....	118.29	4250	118.23	4130	.....	.....	.....	.....
13	120.16	9840	.....	.....	.....	.....	.....	.....	118.62	4980	118.39	4460	118.20	4070	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	.....	.....	119.62	7680	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	118.20	4070	118.24	4150	.....	.....	.....	.....	119.41	6980
15	.....	.....	.....	.....	119.29	6570	.....	.....	.....	.....	118.29	4250	.....	.....	118.20	4070	.....	....	.....	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	118.95	5760	.....	.....	118.29	4250	.....	.....	.....	.....	118.27	4210	.....	.....	.....	.....	.....	.....
17	120.12	9680	.....	.....	.....	.....	.....	.....	118.54	4790	.....	.....	118.12	3920	.....	.....	118.29	4250	.....	.....	.....	.....	.....	.....
18	.....	.....	119.54	7360	.....	.....	.....	.....	118.55	4820	.....	.....	.....	.....	118.24	4150	.....	.....	.....	.....	119.29	6640	119.43	7030
19	.....	.....	.....	.....	119.29	6570	118.95	5760	.....	.....	.....	.....	.....	.....	.....	.....	118.29	4250	.....	.....	119.29	6640	.....	.....
20	120.04	9360	.....	.....	.....	.....	.....	.....	118.54	4790	118.27	4210	118.04	3770	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	.....	.....	119.45	7040	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	118.31	4290	.....	.....	119.45	7090
22	.....	.....	.....	.....	119.24	6430	.....	.....	.....	.....	.....	.....	.....	.....	118.31	4290	.....	.....	118.20	4070	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	118.91	5660	118.50	4700	118.24	4150	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	119.95	9000	119.45	7040	.....	.....	.....	.....	.....	.....	.....	.....	118.00	3700	.....	.....	.....	.....	.....	.....	119.37	6870	.....	.....
25	119.87	8680	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	118.29	4250	.....	.....	.....	.....	.....	.....	119.45	7090
26	.....	.....	.....	.....	119.20	6320	118.87	5570	.....	.....	118.20	4070	.....	.....	118.29	4250	.....	.....	118.31	4290	.....	.....	.....	.....
27	119.87	8680	.....	.....	.....	.....	.....	.....	118.47	4630	118.20	4070	117.95	3610	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	119.83	8520	119.45	7040	.....	.....	.....	.....	.....	.....	118.20	4070	.....	.....	118.29	4250	.....	.....	.....	.....	.....	.....	.....	.....
29	.....	.....	.....	.....	119.20	6320	.....	.....	.....	.....	.....	.....	.....	.....	118.29	4250	.....	.....	118.62	4980	119.37	6870	119.50	7230
30	.....	.....	.....	.....	.....	.....	118.87	5570	.....	.....	118.20	4070	.....	.....	118.29	4250	.....	.....	.....	.....	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	118.20	4070	.....	.....	118.31	4290	.....	.....	118.79	5380	.....	.....	.....	.....

Monthly Discharge of English River at Ear Falls for 1916-7

Drainage Area, 11,700 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	9,840	8,520	9,109	.84	.73	.78	.90
November "	8,000	7,040	7,480	.68	.60	.64	.71
December "	6,920	6,320	6,602	.59	.54	.56	.65
January 1917)	6,190	5,570	5,842	.53	.48	.50	.58
February	5,380	4,630	4,924	.46	.40	.42	.44
March	4,590	4,070	4,255	.39	.35	.36	.42
April	4,070	3,610	3,891	.35	.31	.33	.37
May	4,290	3,700	4,112	.37	.32	.35	.40
June	4,330	4,150	4,241	.37	.35	.36	.40
July	5,380	4,070	4,523	.46	.35	.39	.45
August	6,870	5,760	6,556	.59	.49	.56	.65
September	7,230	6,870	7,012	.62	.59	.60	.67
The year	9,840	3,610	5,712	.84	.31	.49	6.62

Daily Gauge Height of English River at Lac Seul for 1916-7

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	106.66	105.73	105.08	104.81	104.58	104.28	104.01	103.76	103.97	104.19	104.37	105.16
2	106.77	105.76	105.06	104.81	104.54	104.31	104.01	103.74	103.98	104.11	104.50	105.18
3	106.56	105.68	105.06	104.78	104.53	104.30	103.89	103.76	103.98	104.11	104.45	105.18
4	106.58	105.67	105.03	104.81	104.53	104.28	103.89	103.76	103.95	103.96	104.43	105.18
5	106.61	105.63	105.03	104.79	104.52	104.26	103.85	103.74	103.94	103.81	104.56	105.16
6	106.49	105.61	105.03	104.79	104.50	104.26	103.85	103.74	103.93	103.81	104.60	105.18
7	106.43	105.66	105.03	104.80	104.50	104.24	103.91	103.81	103.91	103.71	104.62	105.20
8	106.33	105.61	105.06	104.78	104.50	104.26	103.90	103.86	103.91	103.81	104.68	105.23
9	106.33	105.59	105.11	104.81	104.49	104.24	103.89	103.86	103.91	103.83	104.77	105.23
10	106.31	105.51	105.03	104.75	104.49	104.21	103.88	103.91	103.96	103.79	104.73	105.25
11	106.29	105.51	105.01	104.77	104.49	104.21	103.88	103.91	103.94	103.81	104.77	105.20
12	106.24	105.51	105.01	104.73	104.44	104.18	103.87	103.94	103.89	103.85	104.77	105.10
13	106.21	105.49	104.93	104.73	104.44	104.18	103.87	103.99	103.89	103.85	104.79	105.14
14	106.21	105.46	104.98	104.74	104.45	104.21	103.86	104.01	103.91	103.85	104.89	105.14
15	106.16	105.47	105.00	104.71	104.41	104.19	103.83	104.03	103.86	103.83	104.89	105.16
16	106.16	105.41	104.96	104.71	104.41	104.12	103.81	104.06	103.96	103.84	104.91	105.16
17	106.13	105.43	104.92	104.70	104.39	104.16	103.80	104.04	103.98	103.83	104.93	105.14
18	106.01	105.35	104.93	104.69	104.40	104.13	103.79	104.09	104.06	103.75	104.95	105.18
19	106.01	105.41	104.91	104.68	104.40	104.13	103.79	104.01	104.11	103.79	104.97	105.18
20	106.01	105.31	104.86	104.66	104.35	104.11	103.81	103.99	104.11	103.81	104.95	105.18
21	106.01	105.31	104.88	104.66	104.36	104.11	103.81	104.01	104.16	103.79	104.93	105.16
22	105.95	105.21	104.86	104.64	104.39	104.09	103.77	104.01	104.13	103.79	104.97	105.14
23	105.91	105.21	104.83	104.61	104.40	104.08	103.78	103.96	104.01	103.79	105.00	105.12
24	105.87	105.20	104.83	104.61	104.36	104.06	103.76	103.96	103.99	103.77	105.08	105.10
25	105.93	105.18	104.81	104.60	104.33	104.07	103.76	103.91	104.01	103.75	105.02	105.10
26	105.83	105.17	104.81	104.58	104.31	104.09	103.78	103.91	104.09	103.91	105.02	105.12
27	105.76	105.17	104.84	104.56	104.32	104.08	103.78	103.93	104.11	103.87	105.12	105.10
28	105.71	105.11	104.87	104.58	104.29	104.05	106.76	103.89	104.11	104.04	105.12	105.12
29	105.78	105.13	104.83	104.61	.....	104.05	103.76	103.96	104.11	104.18	105.10	105.14
30	105.71	105.11	104.85	104.58	.....	104.03	103.74	104.01	104.08	104.33	105.10	105.14
31	105.71	.....	104.83	104.58	.....	104.01	.....	103.98	.....	104.31	105.12	.....

English River at Manitou Falls

Location—About 800 feet above the first chute of the Manitou Falls, and five miles below the mouth of the Mattawa River and the old Mattawa H. B. Co's. Post. Cedar River enters the English River ½ mile below the metering section.

Records Available—Discharge measurements from July, 1914.

Drainage Area—14,600 square miles.

Gauge—Vertical staff with enamelled face screwed to a 6-inch pine post and firmly wedged and wired to the right bank 15 feet south of a 2-inch jack pine, which is used as the initial point for soundings. The zero on the gauge (elev. 89.37) is referred to a bench mark (elev. 100.43) painted on a point of rock 2.5 feet southeast of the initial point.

Channel and Control—About 1,200 feet above the station the channel begins to narrow down and turns to the right out of the lake above. It is comparatively straight thence to the station and falls. Both banks are high, rocky and wooded, and will not overflow. The bed of the stream is rocky and permanent. The current is slow above and moderately swift at the section.

Discharge Measurements—Made from a canoe with a small Price current meter.

Remarks—The very steady regimen of the English River, together with the lack of gauge readers, makes it possible and necessary to apply the gauge heights at Ear Falls to the gauge at Manitou Falls. Gauge readings taken on nearly the same day were used in making up curves for the two stations, and the results obtained justify the assumptions made. No allowance is made for "lag."

Discharge Measurements of English River at Manitou Falls in 1917

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Feb. 13....	Taylor, J. R.....	178	3,136	1.93	90.21	6,039(a)	.....
" 13....	"	178	3,136	1.94	90.21	6,088 (a)	.....
July 13....	"	175	3,238	1.65	89.44	5,344	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of English River at Manitou Falls for 1916-7

Drainage Area, 14,600 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	92.30	8240	.....	.....	.....	.....	.....	.....	.....	.....	88.61	4330	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	91.54	7520	90.61	6500	89.78	5590	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	93.06	9230	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	88.92	4640	88.82	4540	.....	.....	.....	.....	.....	.....	92.24	8340
5	.....	.....	.....	.....	.....	.....	91.54	7520	.....	.....	.....	.....	.....	.....	.....	.....	89.47	5250	.....	.....	.....	.....	92.19	8280
6	.....	.....	.....	.....	92.19	8100	.....	.....	90.44	6310	89.73	5530	89.13	4870	.....	.....	.....	.....	.....	.....	91.10	7040	.....	.....
7	.....	.....	93.06	9230	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	92.74	8340
8	.....	.....	.....	.....	92.19	8100	91.33	7290	.....	.....	.....	.....	.....	.....	88.92	4640	89.36	5130	.....	.....	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	90.34	6200	89.68	5480	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	.....	.....	92.85	8950	.....	.....	.....	.....	.....	.....	.....	.....	89.13	4870	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	89.03	4760	.....	.....	.....	.....	.....	.....	92.30	8410
12	.....	.....	.....	.....	92.09	7970	91.23	7180	.....	.....	.....	.....	.....	.....	.....	.....	89.36	5130	89.21	4960	.....	.....	.....	.....
13	94.40	11110	.....	.....	.....	.....	.....	.....	90.23	6080	89.62	5410	89.13	4870	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	.....	.....	92.85	8950	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	89.13	4870	89.23	4980	.....	.....	.....	.....	92.30	8410
15	.....	.....	.....	.....	91.98	7820	.....	.....	.....	.....	89.36	5130	.....	.....	89.13	4870	.....	.....	.....	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	91.09	7030	.....	.....	89.36	5130	.....	.....	.....	.....	89.31	5070	.....	.....	.....	.....	.....	.....
17	94.16	10770	.....	.....	.....	.....	.....	.....	90.02	5850	.....	.....	88.92	4640	.....	.....	89.36	5130	.....	.....	.....	.....	.....	.....
18	.....	.....	92.64	8680	.....	.....	.....	.....	90.05	5890	.....	.....	.....	.....	89.23	4980	.....	.....	.....	.....	91.98	8030	92.35	8470
19	.....	.....	.....	.....	91.98	7820	91.09	7030	.....	.....	.....	.....	.....	.....	.....	.....	89.36	5130	.....	.....	91.98	8030	.....	.....
20	93.95	10480	.....	.....	.....	.....	.....	.....	90.02	5850	89.29	5050	88.71	4430	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	.....	.....	92.40	8370	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	89.42	5190	.....	.....	92.41	8540
22	.....	.....	.....	.....	91.85	7560	.....	.....	.....	.....	.....	.....	.....	.....	89.42	5190	.....	.....	89.13	4870	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	90.99	6920	89.92	5740	89.23	4980	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	93.72	10160	92.40	8370	.....	.....	.....	.....	.....	.....	.....	.....	88.61	4330	.....	.....	.....	.....	.....	.....	92.19	8280	.....	.....
25	93.50	9850	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	89.36	5130	.....	.....	.....	.....	.....	.....	92.41	8540
26	.....	.....	.....	.....	91.75	7520	90.86	6780	.....	.....	89.13	4870	.....	.....	89.36	5130	.....	.....	89.42	5190	.....	.....	.....	.....
27	93.50	9850	.....	.....	.....	.....	.....	.....	89.81	5620	89.13	4870	88.48	4200	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	93.40	9710	92.40	8370	.....	.....	.....	.....	.....	.....	89.13	4870	.....	.....	89.36	5130	.....	.....	.....	.....	.....	.....	.....	.....
29	.....	.....	.....	.....	91.75	7520	.....	.....	.....	.....	.....	.....	.....	.....	89.36	5130	.....	.....	90.23	6080	92.19	8280	92.54	8700
30	.....	.....	.....	.....	.....	.....	90.86	6780	.....	.....	89.13	4870	.....	.....	89.36	5130	.....	.....	.....	.....	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	89.13	4870	.....	.....	89.42	5190	.....	.....	90.67	6570	.....	.....	.....	.....

Monthly Discharge of English River at Manitou Falls for 1916-7

Drainage Area, 14,600 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October - (1916)	11,110	9,710	10,276	.76	.67	.70	.81
November "	9,230	8,370	8,769	.63	.57	.60	.67
December "	8,240	7,520	7,850	.56	.51	.54	.62
January (1917)	7,520	6,780	7,117	.51	.46	.49	.56
February	6,500	5,620	6,004	.45	.38	.41	.43
March	5,590	4,870	5,127	.38	.33	.35	.40
April	4,870	4,200	4,606	.33	.29	.32	.36
May	5,190	4,330	4,930	.36	.30	.34	.39
June.....	5,250	4,980	5,117	.36	.34	.35	.39
July	6,570	4,870	5,477	.45	.33	.38	.44
August	8,280	7,040	7,932	.57	.48	.54	.62
September	8,700	8,280	8,448	.60	.57	.58	.65
The year	11,110	4,200	6,804	.76	.29	.47	6.33

English River near Oak Falls

Location—About one mile above the upper Oak Fall, just above Little Rapids, and about one-half mile below Wilcox Lake, District of Kenora.

Records Available—Discharge measurements from August, 1914.

Drainage Area—15,570 square miles.

Gauge—Vertical staff with enamelled face screwed to a cedar post and firmly wedged in rock on the right bank 200 feet above the metering section. The zero on the gauge (elev. 194.12) is referred to a bench mark (elev. 200.00) painted on a rock in the river near the right bank and 20 feet above the final point for soundings. The initial point for soundings is located on the left bank, and consists of the head of a nail driven in the side of a 12-inch poplar blazed and marked I.P., N. 70° W.

Channel and Control—Straight for about 300 feet above and ½ mile below the station. Both banks are high, rocky and wooded, and not liable to overflow. The bed of the stream is rocky and practically permanent. The current is sluggish above and moderately swift below the station, a small rapid existing about 800 feet below.

Discharge Measurements—Made from a canoe with a small Price current meter.

Remarks—The very steady regimen of the English River, together with the lack of gauge readers, makes it possible and necessary to apply the gauge heights at Ear Falls to the gauge at Oak Falls. Gauge readings taken on nearly the same day were used in making up curves for the two stations, and the results obtained justify the assumptions made. No allowance is made for "lag."

Discharge Measurements of English River near Oak Falls in 1917

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Feb. 10....	Taylor, J. R....	375	6,160	1.05	195.46	6,486 (a)	.....
" 10....	" "	375	6,160	1.06	195.46	6,547 (a)	.....
July 15....	" "	375	6,236	.97	195.05	6,049	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of English River near Oak Falls for 1916-7

Drainage Area, 15,570 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	196.29	8820	.....	.....	.....	.....	.....	.....	.....	.....	194.42	4980	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	195.91	7840	195.48	6880	195.02	6000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	196.68	9990	.....	.....	.....	.....	.....	.....	.....	.....	194.59	5230	194.53	5140	.....	.....	.....	.....	.....	.....	196.27	8760
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	194.86	5710	.....	.....	.....	.....	196.24	8670
5	.....	.....	.....	.....	.....	.....	195.91	7840	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	195.68	7280	.....	.....
6	.....	.....	.....	.....	196.24	8670	.....	.....	195.35	6620	195.00	5960	194.69	5400	.....	.....	.....	.....	.....	.....	.....	.....	196.27	8760
7	.....	.....	196.68	9990	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	194.59	5230	194.81	5620	.....	.....	.....	.....	.....	.....
8	.....	.....	.....	.....	196.24	8670	195.80	7620	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	195.30	6520	194.97	5910	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	.....	.....	196.58	9690	.....	.....	.....	.....	.....	.....	.....	.....	194.69	5400	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	194.64	5320	.....	.....	.....	.....	.....	.....	196.29	8820
12	.....	.....	.....	.....	196.19	8520	195.75	7520	.....	.....	.....	.....	.....	.....	.....	.....	194.81	5620	194.73	5470	.....	.....	.....	.....
13	197.29	11860	.....	.....	.....	.....	.....	.....	195.23	6380	194.95	5870	194.69	5400	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	.....	.....	196.58	9690	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	194.69	5400	194.74	5490	.....	.....	.....	.....	196.29	8820
15	.....	.....	.....	.....	196.14	8400	.....	.....	.....	.....	194.81	5620	.....	.....	194.69	5400	.....	.....	.....	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	195.68	7280	.....	.....	194.81	5620	.....	.....	.....	.....	194.78	5560	.....	.....	.....	.....	.....	.....
17	197.24	11690	.....	.....	.....	.....	.....	.....	195.14	6210	.....	.....	194.59	5230	.....	.....	194.81	5620	.....	.....	.....	.....	.....	.....
18	.....	.....	196.47	9360	.....	.....	.....	.....	195.15	6230	.....	.....	.....	.....	194.74	5490	.....	.....	.....	.....	196.14	8400	196.32	8910
19	.....	.....	.....	.....	196.14	8400	195.68	7280	.....	.....	.....	.....	.....	.....	.....	.....	194.81	5620	.....	.....	196.14	8400	.....	.....
20	197.13	11340	.....	.....	.....	.....	.....	.....	195.14	6210	194.78	5560	194.48	5070	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	.....	.....	196.35	9000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	194.83	5650	.....	.....	196.35	9000
22	.....	.....	.....	.....	196.07	8220	.....	.....	.....	.....	.....	.....	.....	.....	194.83	5650	.....	.....	194.69	5400	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	195.63	7180	195.09	6120	194.74	5490	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	197.02	11010	196.35	9000	.....	.....	.....	.....	.....	.....	.....	.....	194.42	4980	.....	.....	.....	.....	.....	.....	196.24	8670	.....	.....
25	196.91	10680	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	194.81	5620	.....	.....	.....	.....	.....	.....	196.35	9000
26	.....	.....	.....	.....	196.02	8220	195.59	7100	.....	.....	194.69	5400	.....	.....	194.81	5620	.....	.....	194.83	5650	.....	.....	.....	.....
27	196.91	10680	.....	.....	.....	.....	.....	.....	195.05	6050	194.69	5400	194.35	4880	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	196.85	10500	196.35	9000	.....	.....	.....	.....	.....	.....	194.69	5400	.....	.....	194.81	5620	.....	.....	.....	.....	.....	.....	.....	.....
29	.....	.....	.....	.....	196.02	8100	.....	.....	.....	.....	.....	.....	.....	.....	194.81	5620	.....	.....	195.25	6420	196.24	8670	196.42	9210
30	.....	.....	.....	.....	.....	.....	195.59	7100	.....	.....	194.69	5400	.....	.....	194.81	5620	.....	.....	.....	.....	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	194.69	5400	.....	.....	194.83	5650	.....	.....	195.48	6880	.....	.....	.....	.....

Monthly Discharge of English River near Oak Falls for 1916-7

Drainage Area, 15,570 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October... (1916)	11,860	10,500	11,109	.76	.67	.71	.82
November "	9,990	9,000	9,465	.64	.58	.61	.68
December "	8,820	8,100	8,447	.57	.52	.54	.62
January ...(1917)	7,840	7,100	7,418	.50	.46	.48	.55
February .. "	6,880	6,050	6,358	.44	.39	.41	.43
March ..... "	6,000	5,400	5,618	.39	.35	.36	.42
April. ..... "	5,400	4,880	5,199	.35	.31	.33	.37
May..... "	5,650	4,980	5,454	.36	.32	.35	.40
June..... "	5,710	5,490	5,606	.37	.35	.36	.40
July ..... "	6,880	5,400	5,912	.44	.35	.38	.44
August .... "	8,670	7,280	8,284	.56	.47	.53	.61
September. "	9,210	8,670	8,883	.59	.56	.57	.64
The year.....	11,860	4,880	7,313	.76	.31	.47	6.38

Footprint River at Rainy Lake Falls

Location—100 feet above the crest of the lowest fall, at the mouth of the Footprint River where it flows into the north-west bay of Rainy Lake, on Indian Reserve 17A, District of Rainy River.

Records Available—Monthly discharge measurements from July, 1914. Daily gauge heights, Sept. 18, 1914, to June 30, 1917.

Drainage Area—590 square miles.

Gauge—Vertical steel staff gauge, graduated in feet and inches. The zero on the gauge (elevation 101.30) is referred to a bench mark (elevation 110.51) painted on the ledge of a rock on right bank.

Channel—About 40 feet above the station the channel curves to the left and then runs straight for about 140 feet, dropping into Rainy Lake. The banks are high, rocky, wooded, and not liable to overflow. The right bank has been burnt over. The bed of the river contains large boulders, and one channel exists at all stages.

Discharge Measurements—Made from a canoe and wading with a small Price current meter.

Winter Flow—Relation of gauge height to discharge not affected by ice.

Regulation—Occasional operations of the dam at Footprint Lake cause fluctuations in the river at the gauge.

Accuracy—The rating curve is well defined. Open water curve used throughout the year.

Manitou River at Devil's Cascades

Location—About 150 feet above the old dam, at the head of the Devil's Cascades, Rainy River District.

Records Available—Discharge measurements from July, 1914. Daily gauge heights, July 15, 1914, to June 30, 1916.

Drainage Area—435 square miles.

Gauge—An inclined steel staff, graduated in feet and inches, and located on the face of the old dam. The zero of the gauge is at an elevation of 139.38 feet referred to a bench mark (elevation 147.37) painted on a rock 1 foot east of the initial point for soundings.

Channel—Straight for about 150 feet above and 400 feet below the station. The right bank is high, rocky, wooded, and not liable to overflow, but the left bank is low and wooded, with a gradually rising bank, which is not liable to overflow unless the dam is operated. The bed of the stream is composed of rock, and the current is slow, one channel existing at all stages.

Discharge Measurements—Made from canoe or ice with a small Price current meter.

Winter Flow—The relation of gauge height to discharge is affected by ice during the cold period, and measurements are made to determine the winter flow.

Regulation—Several dams exist on the river between the section and Manitou Lake, which are not in operation at present. The operation of the dam just above the station causes fluctuations at the gauge.

Accuracy—A fairly well-defined rating curve has been developed, and records are considered fair.

Seine River at Skunk Rapids

Location—About 200 feet above Skunk Rapids, and 1 mile upstream from the Canadian Northern Ry. bridge. One-half mile north of the C. N. Ry. tracks, and 1 mile west of La Seine Station, in the District of Rainy River.

Records Available—Discharge measurements from August, 1914.

Drainage Area—2,300 square miles.

Gauge—Vertical steel staff gauge with enamelled face, graduated in feet and inches, and located near La Seine station, on the C. N. Ry. The zero on the gauge is at an elevation of 1,138.08 feet, which is referred to a bench mark (elevation 1,152.73) painted on a large boulder, on the right bank of the river, 6 feet from a 6-inch poplar tree used as a final point for soundings. The initial point is on the left bank and consists of a 2-inch spruce tree, blazed and marked I.P. with white paint. "H. E. P. Comm." is painted on the rock directly below the spruce tree.

Channel and Control—Straight for about 500 feet above and 200 feet below the station to the rapids. The right bank of the river curves into a point at the rapids forming a narrow channel. The velocity of the river is slow and the banks are high, rocky and wooded. This land has been burnt over, but most of the trees are still standing. The bed of the stream is sandy and clean, with a few boulders near the right bank. One channel exists at all stages.

Discharge Measurements—Made from a canoe with a small Price current meter.

Winter Flow—The relation of gauge height to discharge is affected by ice during the winter months and measurements are made to determine the winter flow.

Accuracy—Open water rating curve is fairly well defined and estimates are considered good.

Observer—

Discharge Measurements of Seine River at Skunk Rapids in 1917

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917 Aug. 27....	Taylor, J. R....	186	1,903	.54	1146.86	1,028	.....

Daily Gauge Height and Discharge of Seine River at Skunk Rapids for 1916-7

Drainage Area, 2,300 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1148.21	1870	1147.79	1550	1146.88	820	1146.77	680	1146.38	525	1145.67	303	1145.59	337	1146.38	725	1148.56	2180	1148.33	1980	1147.37	1260	1147.41	1280
2	1148.21	1870	1147.79	1550	1146.87	815	1146.77	680	1146.29	491	1145.67	303	1145.59	337	1146.42	745	1148.67	2280	1148.33	1980	1147.37	1260	1147.37	1260
3	1148.21	1870	1147.79	1550	1146.86	810	1146.77	680	1146.25	478	1145.67	303	1145.59	337	1146.46	760	1148.72	2330	1148.28	1930	1147.33	1230	1147.33	1230
4	1148.19	1860	1147.79	1550	1146.86	810	1146.77	680	1146.25	478	1145.67	303	1145.59	427	1146.46	760	1148.78	2390	1148.24	1900	1147.37	1260	1147.31	1220
5	1148.11	1790	1147.73	1500	1146.86	810	1146.77	680	1146.21	464	1145.67	303	1145.59	427	1146.46	760	1148.80	2410	1148.20	1860	1147.36	1250	1147.27	1200
6	1148.05	1740	1147.77	1530	1146.83	795	1146.75	670	1146.21	464	1145.67	303	1145.59	427	1146.54	800	1148.87	2480	1148.16	1830	1147.36	1250	1147.25	1180
7	1148.04	1740	1147.81	1560	1146.83	795	1146.75	670	1146.00	400	1145.67	303	1145.59	427	1146.59	825	1148.87	2480	1148.16	1830	1147.32	1230	1147.20	1160
8	1148.04	1740	1147.86	1600	1146.81	785	1146.75	670	1145.96	388	1145.67	303	1145.59	427	1146.59	825	1148.80	2410	1147.94	1660	1147.32	1230	1147.16	1130
9	1148.04	1740	1147.88	1620	1146.81	785	1146.74	665	1145.96	388	1145.67	303	1145.59	427	1146.63	845	1148.78	2390	1147.94	1660	1147.28	1200	1147.16	1130
10	1148.04	1740	1147.81	1560	1146.81	785	1146.73	660	1145.94	382	1145.67	303	1145.59	427	1146.63	845	1148.77	2380	1147.90	1630	1147.28	1200	1147.12	1110
11	1148.04	1740	1147.77	1530	1146.79	775	1146.71	655	1145.94	382	1145.63	293	1145.59	427	1146.63	845	1148.73	2340	1147.86	1600	1147.28	1200	1147.08	1080
12	1148.02	1720	1147.50	1340	1146.79	775	1146.67	640	1145.92	376	1145.63	293	1145.59	427	1146.63	845	1148.67	2280	1147.86	1600	1147.27	1200	1147.08	1080
13	1148.00	1700	1147.33	1230	1146.79	775	1146.65	630	1145.92	376	1145.63	293	1145.59	427	1146.71	885	1148.59	2210	1147.86	1600	1147.22	1170	1146.87	970
14	1147.98	1690	1147.11	1100	1146.77	765	1146.65	630	1145.92	376	1145.63	293	1145.59	427	1146.79	925	1148.54	2160	1147.86	1600	1147.22	1170	1146.83	945
15	1147.96	1680	1147.00	1040	1146.77	765	1146.63	620	1145.90	370	1145.63	293	1145.56	418	1146.83	945	1148.52	2140	1147.85	1590	1147.18	1140	1146.79	925
16	1147.96	1680	1146.96	1020	1146.75	760	1146.63	620	1145.88	364	1145.63	293	1145.56	418	1146.88	975	1148.46	2090	1147.81	1560	1147.18	1140	1146.79	925
17	1147.94	1660	1146.96	1020	1146.74	755	1146.63	620	1145.88	364	1145.63	293	1145.63	439	1146.96	1020	1148.43	2060	1147.81	1560	1147.18	1140	1146.79	925
18	1147.94	1660	1146.96	1020	1146.73	750	1146.59	605	1145.88	364	1145.63	293	1145.67	451	1147.21	1160	1148.37	2010	1147.76	1520	1147.18	1140	1146.75	905
19	1147.96	1680	1146.92	995	1146.71	740	1146.59	605	1145.88	364	1145.63	293	1145.67	451	1147.29	1210	1148.35	1990	1147.72	1500	1147.13	1110	1146.75	905
20	1147.96	1680	1146.92	995	1146.70	735	1146.56	595	1145.88	364	1145.59	283	1145.71	464	1147.38	1260	1148.43	2060	1147.68	1470	1147.13	1110	1146.75	905
21	1147.96	1680	1146.92	995	1146.69	730	1146.56	595	1145.88	364	1145.59	283	1145.71	464	1147.44	1300	1148.49	2120	1147.64	1440	1147.09	1090	1146.79	925
22	1147.96	1680	1146.92	995	1146.67	720	1146.54	585	1145.83	349	1145.59	283	1145.79	491	1147.54	1370	1148.49	2120	1147.59	1400	1147.09	1090	1146.79	925
23	1147.96	1680	1146.92	995	1146.67	720	1146.54	585	1145.83	349	1145.59	283	1145.88	525	1147.59	1400	1148.41	2040	1147.59	1400	1147.21	1160	1146.79	925
24	1147.90	1630	1146.92	995	1146.67	720	1146.53	580	1145.79	337	1145.59	283	1145.96	555	1147.63	1430	1148.34	1980	1147.55	1380	1147.32	1230	1146.75	905
25	1147.81	1560	1146.90	985	1146.67	720	1146.52	580	1145.75	325	1145.59	283	1146.00	570	1147.71	1490	1148.34	1980	1147.55	1380	1147.34	1240	1146.75	905
26	1147.79	1550	1146.90	985	1146.67	720	1146.51	575	1145.75	325	1145.59	283	1146.00	570	1147.73	1500	1148.32	1970	1147.55	1380	1147.33	1230	1146.79	925
27	1147.79	1550	1146.88	975	1146.67	720	1146.50	570	1145.75	325	1145.59	283	1146.00	570	1147.81	1560	1148.25	1910	1147.51	1350	1147.33	1230	1146.79	925
28	1147.79	1550	1146.88	975	1146.67	720	1146.46	555	1145.75	325	1145.59	283	1146.00	570	1147.90	1630	1148.34	1980	1147.46	1310	1147.33	1230	1146.83	945
29	1147.77	1530	1146.88	975	1146.67	720	1146.44	545	.....	....	1145.59	283	1146.21	655	1148.09	1780	1148.34	1980	1147.45	1310	1147.37	1260	1146.83	945
30	1147.77	1530	1146.88	975	1146.66	715	1146.42	540	.....	....	1145.59	283	1146.21	655	1148.27	1920	1148.34	1980	1147.45	1310	1147.39	1270	1146.83	945
31	1147.79	1550	.....	....	1146.65	710	1146.40	530	.....	....	1145.59	283	.....	....	1148.42	2050	.....	....	1147.41	1280	1147.41	1280	.....	....

Monthly Discharge of Seine River at Skunk Rapids for 1916-7

Drainage Area, 2,300 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	1,870	1,530	1,688	.81	.67	.73	.84
November "	1,620	975	1,224	.70	.42	.53	.59
December "	820	710	759	.36	.31	.33	.38
January.. (1917)	680	530	619	.30	.23	.27	.31
February	525	325	388	.23	.14	.17	.18
March	303	283	292	.13	.12	.13	.15
April	655	337	466	.28	.15	.20	.22
May	2,050	725	1,142	.89	.32	.50	.58
June	2,480	1,910	2,171	1.08	.83	.94	1.05
July	1,980	1,280	1,574	.86	.56	.68	.78
August	1,280	1,090	1,200	.56	.47	.52	.60
September	1,280	905	1,025	.56	.39	.45	.50
The year	2,480	283	1,049	1.08	.12	.46	6.19

Turtle River at Mountain Rapids

Location—About 300 feet above Mountain Rapids, and about 8 miles from the Olive Mine, 12 miles from Mine Centre, which is on the C. N. Ry., in the Rainy River District.

Records Available—Monthly discharge measurements from August, 1914. Daily gauge heights from August 9, 1914.

Drainage Area—1,760 square miles.

Gauge—Vertical steel staff gauge with enamelled face, graduated in feet and inches, and fastened on a crib pier at the C. N. Ry. saw mill, 12 miles from the station. The gauge is located 1,000 feet south of the mouth of Little Turtle River, on the east shore of Little Turtle Lake. Zero on gauge (elevation 82.99) is referred to a bench mark established on a rock with white paint, on the left bank of the river, four feet south of a blazed pine tree, marked I.P. with white paint, which is used as the initial point for soundings. The elevation of this bench mark is 96.00, which is referred to another bench mark (assumed elevation 100.00) established on a rock with white paint, 35 feet north-east of the gauge, at the C. N. Ry. Mill at Mine Centre.

Channel and Control—Straight for about 1,000 feet above and below the station, the water running slowly. The banks are high, wooded and rocky. The bed of the stream is sandy and clean, one channel existing at all stages. The river is used extensively for log driving, and the log jams in Otter Falls affect the section somewhat.

Discharge Measurements—Made from a canoe with a small Price current meter.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice and measurements are made during the winter to determine the flow.

Accuracy—Open water rating curve fairly well defined between gauge heights 91.50 and 94.50. The relation of gauge height to discharge during the log-driving period is affected by back water from log jams.

Observer—Hiram Smith, Mine Centre.

Discharge Measurement of Turtle River at Mountain Rapids in 1917

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917 June 7....	Taylor, J. R....	168	2,915	.39	92.25	1,137	.....

Daily Gauge Height and Discharge of Turtle River at Mountain Rapids for 1916-7

Drainage Area, 1,760 Square Miles.

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	94.00	2190	92.65	1060	92.43	910	91.97	545	91.72	457	91.62	422	91.49	755	93.37	1750	92.84	1420	91.55	780	91.43	730	92.42	1190
2	93.95	2150	92.69	1080	92.41	855	91.97	545	91.70	450	91.62	422	91.49	755	93.53	1850	92.81	1400	91.69	845	91.46	740	92.43	1200
3	93.90	2120	92.70	1080	92.39	800	91.95	540	91.70	450	91.62	422	91.49	755	93.70	1970	92.74	1360	91.75	870	91.48	750	92.46	1210
4	93.83	2060	92.70	1080	92.37	745	91.95	540	91.70	450	91.62	422	91.49	755	93.78	2030	92.69	1330	91.78	885	91.38	705	92.45	1200
5	93.74	2000	92.70	1080	92.37	705	91.93	530	91.70	450	91.60	415	91.47	745	93.91	2120	92.65	1310	91.74	870	91.30	675	92.47	1220
6	93.67	1950	92.70	1080	92.33	685	91.93	530	91.70	450	91.57	404	91.47	745	94.01	2200	92.62	1300	91.73	865	91.22	645	92.49	1220
7	93.62	1910	92.76	1110	92.37	705	91.91	525	91.70	450	91.57	404	91.45	740	94.10	2270	92.63	1300	91.71	855	91.18	625	92.49	1220
8	93.57	1880	92.97	1220	92.37	705	91.91	525	91.68	443	91.57	404	91.45	740	94.18	2330	92.66	1320	91.69	845	91.11	600	92.50	1230
9	93.50	1830	93.05	1260	92.35	695	91.89	515	91.68	443	91.55	398	91.47	745	94.20	2350	92.64	1310	91.66	830	91.09	590	92.51	1240
10	93.41	1770	93.14	1310	92.32	685	91.89	515	91.66	436	91.55	398	91.47	745	94.20	2350	92.61	1290	91.60	805	91.12	605	92.51	1240
11	93.34	1730	93.20	1340	92.30	675	91.89	515	91.66	436	91.53	390	91.49	755	94.20	2350	92.57	1270	91.64	825	91.13	605	92.51	1240
12	93.29	1690	93.14	1310	92.28	665	91.89	515	91.64	429	91.53	390	91.53	775	94.20	2350	92.55	1260	91.59	800	91.28	665	92.49	1220
13	93.23	1650	93.12	1300	92.24	650	91.89	515	91.64	429	91.53	390	91.53	775	94.19	2340	92.48	1220	91.57	790	91.32	685	92.51	1240
14	93.15	1600	93.08	1270	92.22	645	91.87	510	91.62	422	91.53	390	91.57	790	94.15	2310	92.42	1190	91.55	780	91.24	650	92.49	1220
15	93.10	1580	93.02	1240	92.20	625	91.85	505	91.62	422	91.55	398	91.62	815	94.12	2290	92.39	1180	91.47	745	91.18	625	92.49	1220
16	93.05	1540	92.98	1220	92.20	635	91.83	495	91.62	422	91.55	433	91.64	825	94.08	2250	92.31	1140	91.40	715	91.13	605	92.49	1220
17	92.95	1480	92.95	1200	92.18	625	91.83	495	91.62	422	91.55	468	91.68	840	94.04	2220	92.21	1080	91.34	690	91.21	640	92.48	1220
18	92.90	1460	92.92	1190	92.12	605	91.80	485	91.62	422	91.53	495	91.70	850	93.99	2180	92.17	1060	91.30	675	91.28	665	92.46	1210
19	92.89	1450	92.87	1160	92.12	605	91.80	485	91.62	422	91.53	530	91.78	885	93.94	2140	92.12	1040	91.24	650	91.35	695	92.44	1200
20	92.89	1450	92.78	1120	92.12	605	91.80	485	91.62	422	91.53	565	91.87	925	93.89	2110	92.04	1000	91.20	635	91.35	695	92.42	1190
21	92.90	1460	92.78	1120	92.10	595	91.80	485	91.62	422	91.53	565	91.99	980	93.80	2040	91.94	960	91.16	620	91.42	725	92.41	1180
22	92.88	1440	92.70	1080	92.07	585	91.78	478	91.64	429	91.51	560	92.24	1100	93.75	2000	91.87	925	91.14	610	91.46	740	92.41	1180
23	92.84	1420	92.70	1080	92.05	575	91.78	478	91.64	429	91.51	560	92.28	1120	93.66	1940	91.80	895	91.08	585	91.51	765	92.41	1180
24	92.81	1400	92.66	1060	92.03	565	91.78	478	91.64	429	91.51	560	92.37	1160	93.57	1880	91.76	875	91.02	565	91.60	805	92.41	1180
25	92.62	1300	92.62	1040	92.03	565	91.78	478	91.62	422	91.51	560	92.53	1250	93.48	1820	91.72	860	90.94	535	91.71	855	92.41	1180
26	92.56	1260	92.57	1020	92.03	565	91.76	471	91.62	422	91.51	560	92.62	1300	93.42	1780	91.70	850	90.94	535	91.83	910	92.41	1180
27	92.55	1260	92.53	1000	92.03	565	91.76	471	91.62	422	91.49	550	92.78	1380	93.30	1700	91.65	830	90.91	525	92.02	995	92.44	1200
28	92.54	1250	92.49	980	92.03	565	91.76	471	91.62	422	91.49	550	92.91	1460	95.18	1620	91.64	825	90.97	545	92.16	1060	92.47	1220
29	92.53	1250	92.47	970	92.01	560	91.76	471	.....	....	91.49	550	93.07	1560	93.05	1540	91.59	800	91.16	620	92.22	1090	92.47	1220
30	92.53	1250	92.45	960	92.01	560	91.74	464	.....	.....	91.47	545	93.24	1660	92.96	1490	91.55	780	91.24	650	92.26	1110	92.43	1200
31	92.60	1280	.....	.....	91.99	550	91.74	464	.....	.....	91.49	550	.....	.....	92.87	1440	.....	.....	91.33	685	92.37	1160	.....	.....

Monthly Discharge of Turtle River at Mountain Rapids for 1916-7

Drainage Area, 1,760 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	2,190	1,250	1,615	1.24	.71	.92	1.06
November "	1,340	960	1,134	.76	.55	.64	.71
December "	910	550	648	.52	.31	.37	.43
January (1917)	545	464	501	.31	.26	.28	.32
February	457	422	433	.26	.24	.25	.26
March	565	398	473	.32	.23	.27	.31
April	1,660	740	956	.94	.42	.54	.60
May	2,350	1,440	2,033	1.34	.82	1.16	1.34
June	1,420	780	1,113	.81	.44	.63	.70
July	885	525	717	.50	.30	.41	.47
August	1,160	590	755	.66	.34	.43	.50
September	1,240	1,180	1,209	.70	.67	.69	.77
The year	2,350	398	968	1.34	.23	.55	7.47

Wabigoon River near Quibell

Location—About 200 feet above the second fall from the G.T.P. Railway bridge, and ½ mile below the bridge which spans the first fall. One mile east from Quibell Station, Township of Wabigoon, District of Kenora.

Records Available—Discharge measurements from June, 1914.

Drainage Area—2,400 square miles.

Gauge—Vertical staff with enamelled face screwed to a 5-inch hewn spruce post firmly wedged and braced to the rock on the right bank of the river 1,200 feet above the metering station. The zero on the gauge (elev. 1,061.64) is referred to a bench mark (elev. 1,069.46, G.T.P. datum) painted on a point of rock just below the gauge. The initial point for soundings is a spike driven in the rock on the left bank.

Channel and Control—1,200 feet above the station the channel takes a sharp bend to the right, thence running comparatively straight to the station and falls. The water is sluggish above and moderately swift at the station. The banks are high, rocky and wooded. The bed of the stream is full of boulders and crevices. One channel exists at all stages.

Discharge Measurements—Made from canoe and ice with a small Price current meter.

Regulation—The Dryden Timber and Power Company operate a plant on the Wabigoon River at Dryden, which runs 24 hours per day with the exception of Sundays and holidays.

Winter Flow—Ice formation is very heavy here, and the winter flow is somewhat disturbed by it.

Accuracy—Rating curve fairly well defined, and estimates for open water flow only have been made.

Observer—D. C. Warner, Quibell.

Daily Gauge Height and Discharge of Wabigoon River near Quibell for 1916-7

Drainage Area, 2,400 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1065 29	....	1064.33	....	1063.99	....	1063.89		1063.97	....	1064.02	....	1063.37	....	1066.04	2450	1064.16	1340	1063.24	875	1064.10	1310	1063.33	915
2	1065.33	....	1064.37	....	1063.97	....	1063.95		1064.02	....	1063.99	....	1063.37	....	1066.04	2450	1064.10	1310	1063.24	875	1064.08	1300	1063.29	895
3	1065.79	....	1065.02	....	1063.97	....	1063.95		1064.04	....	1063.99	....	1063.39	....	1066.05	2450	1064.04	1280	1063.22	865	1064.06	1290	1063.26	880
4	1066 10	....	1065.31	....	1063.95	....	1063.93		1064.04	....	1063.97	....	1063.37	....	1066.06	2460	1063.97	1240	1063 24	875	1064.02	1270	1063.24	875
5	1066.20	....	1065.81	....	1063.93	....	1063.91		1064.06	....	1063.95	....	1063.35	....	1066.14	2510	1063.93	1220	1063.26	880	1063.97	1240	1063.22	865
6	1066.24	....	1066.22	....	1063.91	....	1063.93		1064.12	....	1063.93	....	1063.33	....	1066.16	2520	1063.93	1220	1063.29	895	1063.81	1160	1063.20	855
7	1066.43	....	1066.47	....	1063.91	....	1063.91		1064.10	....	1063.91	....	1063.31	....	1066.18	2540	1063.83	1170	1063.24	875	1063.72	1110	1063.18	845
8	1066.41	....	1066.56	....	1063.97	....	1063.89		1064.06	....	1063.89	....	1063.29	....	1066.20	2550	1063.81	1160	1063.22	865	1063.68	1090	1063.14	830
9	1066.39	....	1066.62	....	1063.99	....	1063.81		1064.02	....	1063.81	....	1063.26	....	1066.24	2580	1063.76	1130	1063.20	855	1063.64	1070	1063.12	820
10	1066.06	....	1066.81	....	1063.99	....	1063. 83		1063.99	....	1063.76	....	1063.29	....	1066.31	2620	1063.72	1110	1063.16	835	1063.60	1050	1063.08	800
11	1065.68	....	1066.79	....	1064.02	....	1063.81		1063.97	....	1063.72	....	1063.29	....	1066.24	2580	1063.68	1090	1063.14	830	1063.47	985	1063.04	785
12	1065.33	....	1066.56	....	1064.02	....	1063.87		1063.95	....	1063.68	....	1063.31	....	1066.22	2560	1063.64	1070	1063.12	820	106 .45	975	1063.02	775
13	1064.97	....	1066.35	....	1064.02	....	1063.85		1063.93	....	1063.64	....	1063 31	....	1066.14	2510	1063.60	1050	1063.10	810	1063.43	965	1062.99	760
14	1064.83	....	1066.24	....	1064.04	....	1063.66		1063.91	....	1063.60	....	1063.33	....	1066.06	2460	1063.58	1040	1063.08	800	1063.41	955	1062.97	750
15	1064.56	....	1066.20	....	1064.02	....	1063.66		1063.89	....	1063.54	....	1063.33	....	1065.97	2400	1063.56	1030	1063.06	790	1063.37	935	1063.04	785
16	1064.47	....	1066.16	....	1064.02	....	1063.68		1063.87	....	1063.49	....	1063.35	....	1065.89	2350	1063.56	1030	1063. 06	790	1063.35	925	1062.93	735
17	1064.43	....	1066.10	....	1063.99	....	1063.68		1063.85	....	1063.45	....	1063.37	....	1065.89	2350	1063.56	1030	1063.08	800	1063.33	915	1062.91	725
18	1064.41	....	1065.99	....	1063.99	....	1063.70		1063.83	....	1063.41	....	1063.39	....	1065.87	2340	1063.52	1010	1063.08	800	1063.31	905	1062.89	715
19	1064.37	....	1065.93	....	1063.99	....	1063.70		1063.81	....	1063.37	....	1063.56	....	1065.81	2310	1063.49	995	1063.06	790	1063.29	895	1062.87	710
20	1064.35	....	1065.85	....	1063 97	....	1063.72		1063.81	....	1063.35	....	1063.83	....	1065.81	2310	1063.45	975	1063.04	785	1063.29	895	1062.87	710
21	1064.33	....	1065.83	....	1063.99	....	1063.76		1063.83	....	1063.35	....	1063.85	....	1065.79	2290	1063.43	965	1063.02	775	1063.20	855	1062.89	715
22	1064.33	....	1065.79	....	1063.97	....	1063.81		1063.87	....	1063.33	....	1063.97	....	1065.76	2280	1063.41	955	1062.99	760	1063.18	845	1062.91	725
23	1064.31	....	1065.39	....	1063.97	....	1063.83		1063.89	....	1063.33	....	1063.99	....	1065.74	2260	1063.39	945	1062.99	760	1063.16	835	1062.93	735
24	1064.29	....	1064.99	....	1063.95	....	1063.85		1063.93	....	1063.31	....	1064.04	....	1065.72	2250	1063.37	935	1062.97	750	1063.16	835	1062.96	740
25	1064.29	....	1064.66	....	1063.93	....	1063.83		1063.95	....	1063.31	....	1064.72	....	1065.56	2160	1063.35	925	1063.02	775	1063.14	830	1062.89	715
26	1064.26	....	1064.31	....	1063.93	....	1063.81		1063.97	....	1063.31	....	1065.31	....	1065.14	1900	1063.31	905	1063.06	790	1063.14	830	1062.85	700
27	1064.24	....	1064.22	....	1063.93	....	1063.81		1063.97	....	1063.33	....	1065.39	....	1064.76	1680	1063.26	880	1063.14	830	1063.16	835	1062.83	690
28	1064.31	....	1064.16	....	1063.91	....	1063.85		1063.99	....	1063.33	....	1065.66	....	1064.47	1510	1063.22	865	1063.33	915	1063.26	880	1062.81	685
29	1064.31	....	1064.08	....	1063.93	....	1063.87		.....	....	1063.31	....	1065.89	....	1064.39	1470	1063.24	875	1063.68	1090	1063.29	895	1062.79	675
30	1064.33	....	1064.02	....	1063.91	....	1063.91		.....	....	1063.33	....	1066.04	....	1064.31	1430	1063.26	880	1063.99	1250	1063.31	905	1062.76	665
31	1064.35	....	.....	....	1063.89	....	1063.95		.....	....	1063.35	....	.....	....	1064.22	1380	.....	....	1064.04	1280	1063.33	915	.....	....

No winter measurement—hence no attempt has been made to estimate discharge.

Monthly Discharge of Wabigoon River near Quibell for 1916-7

Drainage Area, 2,400 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)							
November "							
December "							
January .. (1917)							
February							
March							
April							
May	2,620	1,380	2,255	1.09	.58	.94	1.08
June	1,340	865	1,055	.56	.36	.44	.49
July	1,280	750	861	.53	.31	.36	.42
August	1,310	830	990	.55	.35	.41	.47
September	915	665	769	.38	.28	.32	.36
The year	2,620	665	1,190	1.09	.28	.50	2.82

Wabigoon River at Wabigoon Falls

Location—About 100 feet above Wabigoon Falls, the last fall on the river, and three miles from its junction with the English River, District of Kenora.

Records Available—Discharge measurements from June, 1914.

Drainage Area—3,120 square miles.

Gauge—Vertical staff with enamelled face screwed to a 5-inch hewn spruce post firmly wedged and braced to the left bank about 200 feet above the metering section. The zero on the gauge (elev. 111.37) is referred to a bench mark (elev. 120.07), consisting of a nail driven in the head of a 4-inch tamarac stump two feet up-stream from the gauge. Another bench mark (elev. 118.51) is painted on a point of rock on the left bank 75 feet below the metering section. The initial point for soundings is on the right bank, the edge of a 5-inch blazed poplar tree, and marked I. P., S. 12° E.

Channel and Control—Straight for about ½ mile above and 100 feet below the station to the falls. Both banks are high, rocky and wooded, and will not overflow. The bed of the stream is composed of rock, with a few boulders and weeds at the right bank. The current is sluggish at and above the station, but swift just below the section.

Discharge Measurements—Made from canoe and ice with a small Price current meter.

Regulation—The Dryden Timber & Power Company operate a plant at Dryden, Ontario. The power is used for the mill and for lighting the town. This plant runs 24 hours per day with the exception of Sundays and holidays, when it runs 12 hours.

Accuracy—The station rating curve is fairly well defined. Estimates of flow have only been made for five open water months.

Discharge Measurements of Wabigoon River at Wabigoon Falls in 1917

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Feb. 6....	Taylor, J.R....	215	2,845	.38	112.12	1,087 (a)	.....
" 6....	"	215	2,845	.39	112.12	1,115 (a)	.....
Mar. 29....	"	214	2,783	.34	111.91	948	.....
" 29....	"	214	2,783	.33	111.91	919	.....
July 16....	"	233	2,993	.39	112.12	1,167	.....

(a) Ice measurement. Control clear.

Daily Gauge Height and Discharge of Wabigoon River at Wabigoon Falls for 1917

Drainage Area, 3,120 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	Gauge Hts. computed by relation table from Wabigoon at Quibell.	.....	.....	.....	.....	.....	.....	.....	114.22	2710	113.27	1900	112.40	1300	113.23	1860	112.52	1370
2	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.22	2710	113.23	1860	112.40	1300	113.22	1860	112.47	1340
3	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.22	2710	113.19	1830	112.37	1280	113.20	1840	112.42	1310
4	.....	....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.22	2710	113.14	1800	112.40	1300	113.17	1820	112.40	1300
5	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.26	2740	113.10	1760	112.42	1310	113.14	1800	112.37	1280
6	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.26	2740	113.10	1760	112.47	1340	113.01	1700	112.34	1270
7	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.27	2750	113.02	1700	112.40	1300	112.93	1640	112.31	1250
8	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.28	2760	113.01	1700	112.37	1280	112.89	1610	112.25	1220
9	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.29	2770	112.96	1660	112.34	1270	112.86	1590	112.22	1200
10	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.31	2790	112.93	1640	112.28	1240	112.82	1560	112.16	1180
11	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.29	2770	112.89	1610	112.25	1220	112.68	1470	112.09	1140
12	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.29	2770	112.86	1590	112.22	1200	112.66	1460	112.05	1120
13	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.26	2740	112.82	1560	112.19	1190	112.63	1440	112.00	1100
14	.....		.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.22	2710	112.80	1550	112.16	1180	112.61	1430	111.95	1080
15	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.19	2680	112.78	1540	112.12	1160	112.56	1400	112.09	1140
16	.....	.....	.....	.....	....	.....		.....	.....	.....	.....	.....	.....	.....	114.16	2650	112.78	1540	112.12	1160	112.54	1380	111.87	1040
17	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.16	2650	112.78	1540	112.16	1180	112.52	1370	111.82	1020
18	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.15	2640	112.73	1500	112.16	1180	112.49	1350	111.78	1010
19	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.12	2620	112.70	1480	112.12	1160	112.47	1340	111.73	990
20	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.12	2620	112.66	1460	112.09	1140	112.47	1340	111.73	990
21	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.12	2620	112.63	1440	112.05	1120	112.34	1270	111.78	1010
22	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.10	2600	112.61	1430	112.00	1100	112.31	1250	111.82	1020
23	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.10	2600	112.59	1410	112.00	1100	112.28	1240	111.87	1040
24	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.09	2590	112.56	1400	111.95	1080	112.28	1240	111.91	1060
25	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	114.01	2520	112.54	1380	112.05	1120	112.25	1220	111.78	1010
26	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	113.83	2370	112.49	1350	112.12	1160	112.25	1220	111.68	975
27	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	113.64	2200	112.42	1310	112.25	1220	112.28	1240	111.63	955
28	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	113.47	2060	112.37	1280	112.52	1370	112.42	1310	111.58	940
29	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	113.42	2020	112.40	1300	112.89	1610	112.47	1340	111.53	925
30	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	113.38	1980	112.42	1310	113.15	1800	112.49	1350	111.44	895
31	.....	.....	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	113.31	1930	.....	.....	113.19	1830	112.52	1370	.....	.....

Monthly Discharge of Wabigoon River at Wabigoon Falls for 1917

Drainage Area, 3,120 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October ..(1916).	.....	.....	.....	.....	.....	.....	.....
November " .	.....	.....	.....	.....	.....	.....	.....
December " .	.....	.....	.....	.....	.....	.....	.....
January..(1917).	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March.....	.....	.....	.....	.....	.....	.....	.....
April.....	.....	.....	.....	.....	.....	.....	.....
May.....	2,790	1,930	2,572	.89	.62	.82	.95
June.....	1,900	1,280	1,553	.61	.41	.50	.56
July.....	1,830	1,080	1,265	.59	.35	.41	.47
August.....	1,860	1,220	1,462	.60	.39	.47	.54
September.....	1,370	895	1,106	.44	.29	.35	.39
The period	2,790	895	1,595	.89	.29	.51	2.91

Winnipeg River at Whitedog Falls

Location—South channel, about 500 feet above the second Whitedog Falls. North Channel, immediately above the upper fall in this channel. These are the sections established by the Manitoba Hydrographic Survey and where measurements are made by that organization.

Records Available—Discharge measurements have been made at irregular intervals at these sections since the summer of 1914 by the Commission's hydrographers, but more regularly by the Manitoba Hydrographic Survey. The water elevations are returned to, and estimates of flow are made by, the Manitoba Hydrographic Survey.

Drainage Area—27,135 sq. miles.

Gauge—South Channel. Two sections of P.W.D. standard gauge plating are placed on the left bank. The zero of this gauge is at an elevation of 1026.09, referred to a B.M. No. 217 W.P.S. chiselled and painted on rock about 150 feet above the crest of the fall on the right bank elevation 1040.01. North Channel—Two sections of P.W.D. standard gauge plating screwed to a timber bolted to face of rock on the right bank of the river 75 feet above the section. The zero of the gauge is at an elevation of 1034.55 sea level datum referred to a B.M. elevation 1038.61 chiselled and painted on a rock on the left bank at the head of the portage. An automatic gauge is also in use to obtain levels of Sand Lake water, located on an island directly above South Channel.

Channel and Control—The entire flow of the river is always confined to the above described channels. Both of these channels are through bed rock. Active control of the flow of the water tributary above Kenora is exercised at that place.

Discharge Measurements—Are made from a cable car at the south channel and from an overhead cable from the shore at the north channel.

Regular Stations

SOUTH-WESTERN ONTARIO DISTRICT

River	Location	Drainage Area Sq. Miles	Township	County
Ausable	near Arkona	408	West Williams	Middlesex
Beaver	near Kimberley	100	Euphrasia	Grey
Bighead	at Meaford	132	St. Vincent	"
Credit	at Cataract Jct	85	Caledon	Peel
Maitland	at Ben Miller	950	Colborne	Huron
Nottawasaga	near Nicolston	416	Essa	Simcoe
Rocky Saugeen	near Markdale	96	Glenelg	Grey
Saugeen	near Port Elgin	1,565	Saugeen	Bruce
"	near Walkerton	850	Brant	"
Sydenham	near Owen Sound	71	Derby	Grey
Thames, main stream	near Byron	1,270	Delaware	Middlesex
" north branch	near Fanshawe	585	London	"
" south branch	near Ealing	515	London and Westminster	"

Ausable River near Arkona

Location—At the highway bridge at Marsh's Mills, about two miles east of the village of Arkona, near lot 22, concession 7, Township of West Williams, County of Middlesex.

Records Available—Discharge measurements from May 14, 1915. Gauge readings from June 24, 1915.

Drainage Area—408 square miles.

Gauge—Vertical staff gauge 0 to 12 feet on the downstream side of the first pier. The elevation of the zero of the gauge is 0.00 and a B.M. is established on top of the right girder, elevation 23.31.

Channel and Control—The discharge measurements are made in the medium fast water between the two rapids. The flow is confined between the abutments at all stages. The stream bed is composed of shale, and will not shift. The channel is straight for 400 yards above and below the section.

Discharge Measurements—Made from the bridge, except in low water, when they are made at a wading section 300 feet above the bridge.

Accuracy—Discharge measurements do not satisfactorily cover the range of stage.

Observer—Milton Marsh, Arkona P.O.

Discharge Measurements of Ausable River near Arkona in 1917

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Feb. 10....	Yeates, W.	25	41	.97	1.71	40(a)	.....
May 17....	"	89	275	.50	1.85	137	.....
Aug. 17....	Roberts, E.	16	32	.80	1.35	25	.....
Oct. 1....	Yeates, W.	22	29	.....	1.32	24	.....

(a) Ice measurement made 600 feet upstream from gauge.

Daily Gauge Height and Discharge of Ausable River near Arkona for 1916-7

Drainage Area, 408 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1.33	32	1.33	32	1.64	90	1.83	98	2.21	164	2.96	184	2.96	685	2.00	200	2.27	308	3.00	710	1.52	64	1.39	39
2	1.29	27	1.31	29	1.62	85	1.83	95	2.21	164	2.87	228	4.46	1970	2.54	442	2.19	276	4.42	1920	1.50	60	1.42	44
3	1.29	27	1.29	27	1.73	112	1.83	92	2.12	136	2.67	228	4.87	2440	2.50	420	2.10	240	3.83	1350	1.50	60	1.37	36
4	1.29	27	1.29	26	1.69	103	1.85	93	2.00	105	2.58	232	4.04	1540	2.29	316	2.10	240	3.37	960	1.50	60	1.37	36
5	1.27	26	1.25	24	1.64	90	2.12	168	1.87	74	2.50	240	3.54	1090	2.31	324	2.00	200	2.83	608	1.50	60	1.37	36
6	1.25	24	1.25	24	1.73	112	3.71	284	1.75	50	2.42	248	4.62	2140	2.25	300	1.98	192	2.54	442	1.50	60	1.46	52
7	1.25	24	1.25	24	1.64	90	3.64	296	1.75	50	2.33	232	4.92	2500	2.19	276	2.42	376	2.33	334	1.46	52	1.42	44
8	1.25	24	1.25	24	1.58	76	3.25	220	1.71	42	2.54	338	4.54	2050	2.10	240	2.37	352	2.33	334	1.44	48	1.31	29
9	1.23	22	1.29	27	1.69	103	2.79	196	1.71	42	2.67	431	3.75	1280	2.21	284	2.12	248	2.67	514	1.40	40	1.37	36
0	1.19	20	1.33	32	1.73	112	2.75	200	1.71	42	2.92	602	3.17	820	2.71	535	1.98	192	2.92	662	1.42	44	1.37	36
1	1.17	19	1.33	32	1.69	103	2.69	196	1.71	42	4.92	2440	2.85	620	2.85	620	1.98	192	3.10	770	1.40	40	1.33	32
2	1.17	19	1.33	32	1.71	107	2.64	196	1.67	36	5.58	3490	2.71	535	2.71	535	1.81	133	2.71	536	1.39	39	1.35	34
3	1.29	27	1.33	32	1.67	85	2.39	128	1.62	30	5.04	2660	2.54	442	2.42	376	1.75	118	2.54	442	1.35	34	1.33	32
4	1.33	32	1.33	32	1.62	64	2.31	118	1.62	30	4.67	2200	2.31	324	2.21	284	2.58	464	2.37	352	1.33	32	1.29	27
15	1.33	32	1.31	29	1.58	46	2.50	196	1.60	28	4.23	1730	2.27	308	2.04	216	2.42	376	2.33	334	1.33	32	1.31	29
16	1.31	29	1.29	27	1.58	46	2.50	212	1.58	26	3.83	1350	2.23	292	1.96	184	2.12	248	2.44	387	1.33	32	1.29	27
17	1.25	24	1.29	27	1.54	39	2.04	85	1.56	25	4.04	1540	2.12	248	1.85	145	1.97	188	2.33	334	1.33	32	1.29	27
18	1.33	32	1.29	27	1.52	36	1.83	50	1.52	22	4.29	1790	2.08	232	1.79	128	1.85	145	4.00	1500	1.29	27	1.29	27
19	1.33	32	1.29	27	1.50	34	1.83	58	1.50	20	3.67	1200	2.08	232	1.79	128	1.77	122	3.71	1240	1.29	27	1.25	24
20	1.62	85	1.29	27	1.50	34	1.75	50	1.50	20	3.62	1160	2.08	232	2.06	224	1.69	103	3.69	1220	1.29	27	1.25	24
21	1.89	157	1.29	27	1.50	34	1.75	50	1.58	26	4.04	1540	2.17	268	2.29	316	1.60	80	3.71	1240	1.29	27	1.29	27
22	1.62	85	1.29	27	1.50	34	1.69	39	1.62	22	4.25	1750	2.33	333	2.71	535	1.55	70	3.42	995	1.33	32	1.25	24
23	1.50	60	1.31	29	1.50	34	1.65	34	2.08	76	5.00	2600	2.42	376	4.50	2010	1.54	68	2.94	674	1.33	32	1.25	24
24	1.44	48	1.54	68	1.50	34	1.64	33	2.37	123	5.71	3710	2.54	442	4.29	1790	1.62	85	2.69	524	1.73	113	1.25	24
25	1.33	32	1.50	60	1.50	34	1.62	30	2.33	88	4.79	2350	2.42	376	5.50	3350	1.67	98	2.37	352	1.71	108	1.25	24
26	1.33	32	1.39	39	1.50	34	1.62	30	2.50	105	4.08	1580	2.33	333	4.42	1920	2.67	513	2.15	260	1.67	98	1.21	21
27	1.33	32	1.42	44	1.54	39	1.62	30	2.81	164	3.67	1200	2.21	284	3.67	1200	5.46	3290	1.96	184	1.75	118	1.27	26
28	1.33	32	1.46	52	1.71	72	1.62	30	3.08	232	3.83	1350	2.17	268	3.23	860	3.64	1175	1.81	133	1.67	98	1.27	26
29	1.33	32	1.56	72	1.83	100	1.62	30	.....	.....	3.64	1180	2.04	216	2.94	675	3.44	1008	1.73	113	1.58	76	1.21	21
30	1.33	32	1.75	118	1.94	128	1.75	50	.....	.....	3.33	930	2.00	200	2.69	524	3.46	1020	1.64	90	1.50	60	1.29	27
31	1.33	32	.....	.....	1.87	110	1.98	100	.....	.....	3.04	735	.....	.....	2.39	361	.....	.....	1.56	72	1.46	52	.....	.....

Monthly Discharge of Ausable River near Arkona for 1916-7

Drainage Area, 408 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October... (1916)	157	19	37	.38	.05	.09	.10
November "	118	24	37	.29	.06	.09	.10
December "	128	34	72	.31	.08	.18	.21
January .. 1917)	296	30	113	.73	.07	.28	.32
February	232	20	71	.57	.05	.17	.18
March	3,710	184	1,336	9.09	.45	3.27	3.77
April	2,500	200	769	6.13	.49	1.88	2.10
May	3,350	128	637	8.21	.31	1.56	1.80
June	3,290	68	404	8.07	.17	.99	1.10
July.....	1,920	72	632	4.71	.18	1.55	1.79
August.....	118	27	34	.29	.07	.13	.15
September.....	52	21	31	.13	.05	.08	.09
The year	3,710	19	352	9.09	.05	.86	11.71

Beaver River near Kimberley

Location—At Hill's Bridge, about 2 miles above Kimberley, on the south half of lot 2, concession 5, Township of Euphrasia, County of Grey.

Records Available—Discharge measurements at Weber's Bridge September, 1914, to January, 1915. Discharge measurements April 25, 1915, to date, at Hill's Bridge. Daily gauge heights from April 25, 1915.

Drainage Area—100 square miles.

Gauge—Vertical staff 0 to 6 feet on tree on left bank 20 feet downstream from bridge. Zero on gauge is 0.00.

Channel and Control—Channel straight above and below for a distance of 200 feet. The banks and control are permanent under ordinary conditions. The bed is composed of stones and gravel, one channel existing at all stages.

Discharge Measurements—Made from the bridge during the high-water period, and from a permanent wading section located 20 feet above the bridge for the low-water stages.

Regulation—The Hydro-Electric Power Commission's power plant located three-quarters of a mile upstream, though a twenty-four hour power, has a marked effect on the river stage at this section.

Accuracy—The rating curve is fairly well defined, but open-water estimates are subject to errors, due to fluctuations in stage caused by operation of power plant.

Observer—A. Hill, Kimberley, P.O.

Discharge Measurements of Beaver River near Kimberley in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 4....	Yeates, W.....	57	22	1.74	.62	38	.....
1917							
Jan. 7....	Roberts, E.	56	27	2.21	.75	60	.....
Feb. 16....	Yeates, W.....	20	37	3.14	2.08	118 (a)	.....
April 13....	Roberts, E.	57	64	2.84	1.42	180 (b)	.....
May 9....	"	55	74	2.80	1.58	206	.....
June 15..	"	57	58	2.76	1.35	160	.....
July 20....	"	57	61	2.98	1.37	182	.....
Aug. 3....	"	57	40	2.47	1.00	99	.....
Sept. 15....	Yeates, W.....	57	37	2.38	.92	89	.....
" 16....	"	57	37	2.46	.92	91	.....
Oct. 17....	"	57	40	2.64	.99	106	.....

(a) Ice measurement.
(b) Ice has scoured bed of stream.

Daily Gauge Height and Discharge of Beaver River near Kimberley for 1916-7

Drainage Area, 100 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	0.58	33	0.79	70	1.08	115	1.04	108	1.25	94	1.12	121	2.37	370	2.21	337	1.42	175	1.37	165	0.96	95	0.83	76
2	0.62	37	0.79	70	1.04	108	1.04	108	1.50	137	1.04	108	2.96	494	2.04	301	1.33	158	1.21	137	1.00	101	0.71	58
3	0.62	37	0.87	82	0.79	70	1.04	108	1.42	121	1.00	101	2.92	486	2.04	301	1.21	137	1.21	137	0.96	95	0.92	89
4	0.60	35	0.75	64	0.96	95	0.96	95	1.33	108	0.92	89	2.87	475	2.04	301	1.25	144	1.12	121	0.87	82	1.08	115
5	0.67	41	0.79	70	1.46	182	0.87	82	1.50	135	0.92	89	2.83	467	1.75	240	1.29	150	1.12	121	0.75	64	0.83	76
6	0.62	37	0.79	70	1.00	101	0.83	76	1.62	158	1.04	108	2.75	450	1.29	150	1.29	150	1.12	121	1.00	101	0.96	95
7	0.62	37	0.79	70	1.17	130	0.67	52	1.42	121	0.87	81	2.58	414	1.46	182	1.37	165	1.08	115	0.96	95	0.92	89
8	0.62	37	0.79	70	1.04	108	1.00	101	1.00	101	0.92	89	2.42	381	1.46	182	1.33	158	1.04	108	0.96	95	0.71	58
9	0.62	37	0.92	89	1.25	144	1.00	101	1.25	92	0.87	81	2.37	370	1.54	198	1.29	150	1.42	175	0.96	95	0.75	63
10	0.71	45	0.92	89	0.87	82	1.00	101	1.29	95	0.87	81	1.37	165	1.42	175	1.08	115	2.04	301	0.92	89	0.87	82
11	0.81	55	0.96	95	0.92	89	1.17	130	1.42	121	0.79	70	1.33	158	1.42	175	1.27	147	1.71	232	0.92	89	0.87	82
12	0.81	55	0.71	58	0.83	76	1.21	137	1.79	121	0.92	89	1.50	190	1.42	175	1.27	147	1.87	265	0.87	82	0.83	76
13	0.87	61	0.96	95	1.17	130	1.42	121	1.87	137	1.12	121	1.46	182	1.25	144	1.17	130	2.00	293	1.08	115	1.00	101
14	0.83	57	0.87	82	1.42	175	1.17	121	2.25	206	1.00	101	1.42	175	1.37	165	1.29	150	2.12	318	0.96	95	0.92	89
15	0.75	49	0.87	82	1.42	175	1.42	121	1.96	154	0.96	95	1.21	137	1.33	158	1.33	158	1.67	224	0.96	95	0.75	63
16	0.79	53	0.83	76	1.62	214	1.37	118	1.71	115	1.08	115	1.37	165	1.33	158	0.96	95	1.71	232	0.92	89	0.79	70
17	0.96	72	0.83	76	1.71	232	1.50	135	1.42	121	1.08	115	1.29	150	1.37	165	0.75	63	1.62	214	0.87	82	0.83	76
18	0.79	53	0.83	76	1.83	257	1.37	115	0.75	64	0.79	70	1.33	158	1.33	158	0.92	89	1.62	214	0.80	71	0.92	89
19	0.96	72	0.67	52	2.00	293	1.42	121	1.33	101	0.96	95	1.29	150	1.25	144	1.17	130	1.46	182	0.75	63	0.87	82
20	0.87	61	0.87	82	1.87	265	1.46	128	0.92	89	0.96	95	1.58	206	1.12	121	1.21	137	1.33	158	0.96	95	0.83	76
21	0.79	53	0.92	89	1.87	265	1.33	108	0.96	95	0.96	95	2.08	309	1.25	144	1.04	108	1.00	101	0.96	95	0.87	82
22	0.67	41	1.00	101	1.83	257	1.33	108	0.87	81	1.17	130	1.75	240	1.42	175	1.04	108	0.96	95	0.92	89	1.00	101
23	0.79	53	0.96	95	1.71	232	1.46	130	0.87	81	1.33	158	1.75	240	1.50	190	1.08	115	1.04	108	0.96	95	0.75	63
24	0.83	57	1.00	101	0.96	95	1.46	130	1.04	108	2.04	301	1.79	248	1.42	175	0.96	95	1.00	101	1.08	115	0.87	82
25	0.96	72	1.12	121	1.04	108	1.42	121	0.96	95	1.67	224	2.29	351	1.50	190	1.04	108	0.87	82	0.96	95	0.92	89
26	0.92	67	0.92	89	1.33	158	1.29	98	0.92	89	2.37	370	2.12	318	1.46	182	1.04	108	0.96	95	0.75	63	0.96	95
27	0.83	57	0.87	82	1.42	175	1.21	86	0.92	89	2.92	486	2.04	301	1.33	158	1.12	121	1.00	101	0.75	63	1.00	101
28	0.83	57	1.04	108	1.37	165	1.46	130	1.21	137	2.42	381	2.21	337	1.42	175	1.08	115	0.96	95	1.08	115	0.92	89
29	0.79	53	1.37	165	1.21	137	1.25	95	.....	.....	2.08	309	2.00	293	1.46	182	1.25	144	0.92	89	1.00	101	0.92	89
30	0.92	67	1.42	175	1.04	108	0.92	89	.....	.....	2.08	309	2.12	318	1.42	175	1.08	115	0.92	89	1.00	101	0.75	63
31	0.81	55	.....	.....	1.04	108	0.96	95	.....	.....	2.12	318	.....	....	1.42	175	.....	.....	0.96	95	0.83	76	.....	.....

Monthly Discharge of Beaver River near Kimberley for 1916-7

Drainage Area, 100 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile.			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	72	33	51	.72	.33	.51	.59
November "	175	52	88	1.75	.52	.88	.98
December "	293	70	156	2.93	.70	1.56	1.80
January .. (1917)	137	52	109	1.37	.52	1.09	1.26
February	206	64	113	2.06	.64	1.13	1.18
March	486	70	161	4.86	.70	1.61	1.86
April	494	137	290	4.94	1.37	2.90	3.24
May	337	121	189	3.37	1.21	1.89	2.18
June	175	63	130	1.75	.63	1.30	1.45
July	318	82	158	3.18	.82	1.58	1.82
August	115	63	90	1.15	.63	.90	1.04
September	115	58	82	1.15	.58	.82	.91
The year.....	494	33	135	4.94	.33	1.35	18.30

Bighead River at Meaford

Location—At the Georgian Bay Milling & Power Co. grist mill bridge outside of the Town of Meaford, near lot 15, concession 5, Township of St. Vincent, County of Grey.

Records Available—Discharge measurements and daily gauge heights from June 10, 1915.

Drainage Area—132 square miles.

Gauge—Vertical staff 0 to 12 feet on right abutment. Elevation of zero on gauge is 0.00.

Channel and Control—The channel is straight for 100 feet above and 500 feet below the gauging station. The bed of the stream is composed of stones and gravel, and is shifting. During the freshet stage, banks and control are not stationary. During a freshet in January, 1916, the stream scoured badly, completely changing the rating curve.

Discharge Measurements—Made at the bridge, also at a wading station 100 feet downstream.

Regulation—Low-water flow is controlled by the Georgian Bay Milling & Power Co.'s dam located four miles upstream. As the plant is usually run for 24 hours each day, except Sunday, the fluctuations will not be great.

Accuracy—The rating curve is subject to changing conditions due to scouring.

Observer—Wilbert Baker, Meaford.

Discharge Measurements of Bighead River at Meaford in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 4....	Yeates, W.....	13	7	.87	.96	6	.....
" 4....	"	43	29	.20	.96	6	.....
1917							
Jan. 5....	Roberts, E.....	70	69	2.00	1.75	138 (a)	.....
Feb. 18....	Yeates, W.....	20	18	2.56	2.62	47 (b)	.....
April 11....	Roberts, E.....	84	147	2.72	2.42	401 (c)	.....
May 8....	"	80	94	1.85	1.92	174	.....
June 14....	"	95	127	2.50	2.33	318	.....
July 19....	"	75	875	1.85	1.83	162	.....
Aug. 3....	"	67	63	.99	1.42	62	.....
Sept. 15....	Yeates, W.....	23	3	.44	.83	2	.....
Oct. 17....	"	47	29	.35	1.12	10	.....

(a) Section partially ice-covered.
(b) Ice measurement made 100 feet above regular section.
(c) Section has scoured badly.

Daily Gauge Height and Discharge of Bighead River at Meaford for 1916-7

Discharge Area, 132 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	0.62	0	1.48	73	2.25	173	1.98	138	2.50	101	3.69	179	3.81	925	2.19	267	1.67	121	2.54	403	1.42	76	1.29	57
2	1.27	46	1.42	66	2.00	151	1.89	127	2.44	89	3.33	132	4.14	1060	2.35	320	1.67	121	2.54	403	1.42	76	1.33	64
3	1.25	43	1.42	66	2.00	141	1.83	119	2.31	68	2.79	62	4.14	1060	2.33	318	1.67	121	2.27	295	1.39	72	1.33	64
4	0.67	0	1.42	66	2.00	141	1.83	119	2.17	46	2.50	24	3.83	930	2.27	295	1.60	107	2.12	243	1.35	66	1.33	64
5	0.69	0	0.83	0	2.19	166	1.83	119	2.17	42	2.50	24	3.56	820	2.19	267	1.58	103	1.89	174	1.37	69	1.35	66
6	1.31	51	1.50	76	2.33	184	1.92	127	2.27	51	2.50	24	3.96	985	2.17	260	1.62	111	1.83	158	1.37	69	1.33	64
7	1.25	43	1.44	68	2.52	209	1.85	114	2.50	77	2.42	14	3.67	865	2.04	217	1.79	148	1.67	121	1.37	69	1.37	69
8	0.67	0	1.42	66	2.50	206	1.83	107	2.33	51	2.33	3	3.33	725	1.94	188	2.00	205	2.54	403	1.35	66	1.42	76
9	1.23	41	1.39	62	2.35	187	1.87	109	2.69	94	2.33	3	3.00	590	1.92	183	1.96	194	2.79	505	1.33	64	0.79	9
10	0.67	0	1.46	71	2.17	163	1.92	111	2.62	81	2.33	3	2.81	515	1.87	169	1.85	164	4.17	1070	1.37	69	1.42	76
11	1.27	46	1.50	76	2.10	154	1.92	107	2.73	92	2.83	67	2.42	355	1.83	158	1.75	138	4.08	1030	1.42	76	0.75	7
12	1.29	49	1.50	76	2.02	144	1.98	111	2.75	90	2.64	42	3.04	610	1.83	158	1.64	115	3.50	795	1.42	76	1.39	72
13	1.50	76	1.50	76	2.00	141	2.00	110	2.83	97	2.67	46	2.75	490	1.75	139	1.67	121	2.71	473	1.44	79	1.33	64
14	1.56	84	1.50	76	2.00	141	2.00	106	2.83	93	3.33	132	2.67	455	1.75	139	2.02	211	2.42	354	1.60	107	1.42	76
15	1.58	86	1.50	76	1.98	138	2.00	102	2.67	68	3.04	94	2.56	410	1.75	139	1.94	188	2.37	334	1.48	86	1.02	26
16	1.75	108	1.50	76	1.94	133	2.00	98	2.67	64	2.67	46	2.50	387	1.71	129	1.83	158	2.08	229	1.42	76	0.67	3
17	1.85	121	1.52	79	1.92	131	2.52	162	2.67	60	3.08	151	2.39	342	1.67	121	1.64	115	2.06	223	1.35	66	1.33	64
18	1.75	108	1.58	86	1.87	124	2.44	148	2.67	57	3.00	167	2.33	318	1.67	121	1.58	103	1.92	183	1.33	64	1 33	64
19	1.77	111	1.52	79	1.96	136	2.33	129	2.73	60	4.42	404	2.48	378	1.67	121	1.62	111	1.92	183	0.75	7	1.00	24
20	1.73	106	1.50	76	2.00	141	2.33	125	2.75	56	4.60	453	2.87	540	1.67	121	1.89	174	1.81	153	1.35	66	1.33	64
21	1.67	98	1.44	68	2.10	154	2.19	103	2.69	49	3.79	374	3.52	805	1.73	134	1.77	143	1.77	143	1.33	64	1.02	26
22	1.64	94	1.42	66	2.04	146	2.08	85	2.67	46	4.50	466	3.33	725	1.87	169	1.67	121	1.75	139	1.33	64	1.37	69
23	1.58	86	1.52	79	1.98	138	2.00	71	2.67	46	4.33	444	2.87	540	2.08	230	1.71	129	1.75	139	1.33	64	0.67	3
24	1.50	76	1.58	86	1.92	131	2.00	67	2.67	46	5.94	653	2.62	436	2.33	318	1.67	121	1.67	121	1.37	69	1.37	69
25	1.50	76	1.58	86	1.96	136	2.00	63	2.67	46	5.17	553	2.52	395	2.35	326	1.73	134	1.60	107	1.52	93	0.69	4
26	1.46	71	1.58	86	2.06	149	2.10	72	3.04	94	4.96	526	2.52	395	2.25	288	1.75	138	1.50	89	1.39	72	1.33	64
27	1.42	66	1.71	103	2.14	159	2.17	77	3.08	99	5.06	539	2.44	362	2.14	250	1.67	121	1.52	93	1.33	64	1.33	64
28	1.42	66	1.81	116	2.17	163	2.17	73	3.58	164	4.94	523	2.33	318	2.00	205	1.67	121	1.50	89	1.25	52	1.37	69
29	1.42	66	2.08	151	1.94	133	2.17	70	.....	.....	4.46	461	2.33	318	1.79	148	1.67	121	1.50	89	1.27	54	1.33	64
30	1.52	79	2.44	198	1.92	131	2.08	54	.....	.....	4.06	1030	2.33	318	1.73	134	1.83	158	1.46	83	1.25	52	1.39	72
31	1.50	76	.....	.....	1.92	131	2.08	50	.....	.....	4.00	1000	.....	.....	1.67	121	.....	.....	1.42	76	1.29	57	.....	.....

Monthly Discharge of Bighead River at Meaford for 1916-7

Drainage Area, 132 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	121	0	64	.92	.00	.48	.55
November "	198	0	81	1.50	.00	.61	.68
December "	184	124	151	1.39	.94	1.14	1.31
January.. (1917)	148	50	102	1.12	.38	.77	.89
February	164	42	72	1.24	.32	.55	.57
March	1,030	3	278	7.80	.02	2.11	2.43
April.....	1,060	318	579	8.03	2.41	4.39	4.90
May.....	326	121	198	2.47	.92	1.50	1.73
June	205	103	138	1.55	.78	1.05	1.17
July.....	1,070	76	287	8.11	.58	2.17	2.50
August	107	7	68	.81	.05	.51	.59
September	76	3	53	.58	.02	.40	.45
The year..... ...	1,070	0	173	8.11	.00	1.31	17.79

Credit River at Cataract Junction

Location—About 500 feet from C.P.R. station at Cataract Junction, lot 14, concession 3, Township of Caledon, County of Peel.

Records Available—Discharge measurements from June, 1912. Daily gauge heights from May 7, 1915.

Drainage Area—85 square miles.

Gauge—Vertical staff 0 to 6 feet on tree on right bank. Zero on gauge (elevation 8.00) is referred to a B.M. (elevation 10.00) painted on rock 100 feet downstream from metering section.

Channel and Control—The channel is straight for about 350 feet above and 300 feet below the section. The right bank is low, and overflows during high stages. The bed is composed of gravel, which is shifting during flood stages.

Discharge Measurements—Made at permanent wading section at all stages.

Winter Flow—Relation of gauge height to discharge is affected by ice, and measurements are made to determine this flow.

Regulation—The dam at Erin, about four miles upstream, causes serious fluctuations in the river stage at this section. Semi-daily gauge readings will not give a representative mean.

Accuracy—A fairly well-defined rating curve has been established for this station. The accuracy of the estimates of discharge depends upon the accuracy of the mean daily gauge heights.

Observer—Alfred Riches, Cataract Junction.

Discharge Measurements of Credit River at Cataract Junction in 1917

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
May 12....	Roberts, E.	41	33	1.85	.81	61	.....
" 23....	Yeates, W.....	41	42	2.70	1.08	112	.....
July 26....	Roberts, E.....	40	22	1.22	8.56	27	.....
Sept. 26....	Yeates, W.....	40	19	.87	8.47	16	.....
Oct. 19....	"	40	29	1.45	8.71	42	.....

Daily Gauge Height and Discharge of Credit River at Cataract Junction for 1916-7

Drainage Area, 85 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	8.60	27	8.65	32	8.74	43	9.25	37	9.43	42	9.83	129	9.55	280	8.81	54	8.72	40	8.91	72	8.56	25	8.61	28
2	8.57	24	8.63	30	8.65	32	9.21	54	9.12	19	9.69	91	9.84	410	8.79	51	8.72	40	9.12	126	8.56	25	8.61	28
3	8.56	23	8.69	36	8.61	28	9.12	65	9.25	24	9.53	57	9.75	368	8.79	51	8.73	42	8.87	65	8.60	27	8.61	28
4	8.50	18	8.71	39	8.71	39	8.87	40	9.31	28	9.75	107	9.39	217	8.77	48	8.68	35	8.76	46	8.58	26	8.57	26
5	8.61	28	8.63	30	8.75	45	8.71	28	9.54	59	9.73	101	9.21	154	8.76	46	8.64	31	8.71	39	8.54	24	8.54	24
6	8.57	24	8.72	40	8.69	36	8.75	45	9.21	22	9.71	96	9.14	132	8.94	79	8.67	34	8.67	34	8.59	27	8.50	22
7	8.55	22	8.67	34	8.64	31	8.69	36	9.37	34	9.69	91	9.12	126	8.83	57	8.69	36	8.62	29	8.57	26	8.61	28
8	8.50	18	8.63	30	8.69	36	8.69	36	9.39	36	9.73	101	9.06	109	8.79	51	8.75	45	8.72	40	8.63	30	8.56	25
9	8.57	24	8.63	30	8.69	36	8.96	38	9.28	26	9.64	79	9.00	93	8.78	49	8.69	36	8.96	84	8.79	51	8.56	25
10	8.59	26	8.70	37	8.69	36	9.67	141	9.19	22	9.44	43	8.94	79	8.76	46	8.70	37	9.33	196	8.70	37	8.59	27
11	8.58	25	8.69	36	8.71	39	9.92	157	9.17	21	9.33	30	8.92	75	8.71	39	8.70	37	9.89	435	8.63	30	8.56	25
12	8.53	21	8.72	40	8.63	30	9.84	132	9.31	28	9.53	15	9.06	109	8.73	42	8.65	32	9.17	141	8.64	31	8.56	25
13	8.59	26	8.69	36	8.85	44	9.76	109	9.44	43	8.85	16	9.00	93	8.63	30	8.63	30	9.01	96	8.64	31	8.52	23
14	8.56	23	8.69	36	8.88	35	9.83	129	9.67	86	8.84	17	8.90	70	8.64	31	8.71	39	9.21	154	8.59	27	8.56	25
15	8.52	20	8.62	29	9.31	96	9.58	66	9.23	24	8.85	15	8.88	66	8.63	30	8.76	46	9.15	135	8.59	27	8.59	27
16	8.62	30	8.51	23	9.50	120	9.60	70	9.69	91	8.64	17	8.81	54	8.64	31	8.72	40	8.85	61	8.59	27	8.51	23
17	8.60	27	8.63	30	9.42	75	9.71	96	9.39	36	8.69	22	8.79	51	8.64	31	8.68	35	8.92	75	8.59	27	8.56	25
18	8.58	25	8.56	25	9.52	75	9.64	79	9.52	56	8.79	36	8.83	57	8.62	29	8.69	36	8.80	52	8.58	26	8.52	23
19	8.62	30	8.47	21	9.67	86	9.58	66	9.04	17	8.83	29	8.87	65	8.64	31	8.70	37	8.77	48	8.55	25	8.55	25
20	8.87	71	8.68	35	9.29	50	9.43	42	9.60	70	8.81	34	8.93	77	8.70	37	8.71	39	8.72	40	8.60	27	8.52	23
21	8.96	92	8.71	39	9.29	50	9.33	30	9.62	75	8.87	52	9.10	120	8.69	36	8.60	27	8.67	34	8.54	24	8.57	26
22	8.83	63	8.77	48	9.98	21	9.56	63	9.56	63	8.86	63	9.04	104	8.75	45	8.62	29	8.69	36	8.51	23	8.55	25
23	8.72	44	8.60	27	9.52	56	9.42	40	9.65	82	9.04	104	8.92	75	9.08	115	8.60	27	8.63	30	8.53	24	8.52	23
24	8.71	43	8.66	33	9.37	24	9.46	46	9.75	107	10.27	625	8.89	68	9.02	98	8.83	57	8.60	27	8.77	48	8.58	26
25	8.61	28	8.67	34	9.48	49	9.56	63	9.62	75	10.69	835	8.81	54	8.97	86	8.74	43	8.62	29	8.63	30	8.59	27
26	8.59	26	8.72	40	9.58	66	9.03	17	9.75	107	11.14	1060	8.86	63	8.78	49	8.75	45	8.60	27	8.60	27	8.54	24
27	8.62	30	8.74	43	9.48	49	9.42	40	9.80	120	10.94	960	8.85	61	8.73	42	8.79	51	8.60	27	8.61	28	8.54	24
28	8.60	27	8.62	29	9.33	30	9.18	21	9.81	123	10.31	645	8.81	54	8.72	40	8.72	40	8.60	27	8.61	28	8.54	24
29	8.62	30	8.79	51	9.44	43	9.56	63	.....	.....	9.70	345	8.77	48	8.70	37	8.72	40	8.65	32	8.60	27	8.52	23
30	8.73	46	8.75	45	9.31	28	9.44	43	.....	.....	9.62	309	8.83	57	8.60	27	8.72	40	8.62	29	8.61	28	8.53	24
31	8.64	33	.....	.....	9.31	28	9.62	75	.....	.....	9.27	175	.....	.....	8.69	36	.....	.....	8.53	24	8.53	24	.....	.....

Monthly Discharge of Credit River at Cataract Junction for 1916-7

Drainage Area, 85 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	92	18	32	1.08	.21	.38	.44
November "	51	21	35	.60	.25	.41	.46
December "	120	21	47	1.41	.25	.55	.63
January (1917)	157	17	64	1.85	.20	.75	.86
February	123	17	55	1.45	.20	.65	.68
March	1,060	15	203	12.48	.18	2.39	2.76
April	410	51	113	4.82	.60	1.33	1.48
May	115	27	48	1.35	.32	.56	.65
June	57	27	38	.67	.32	.45	.50
July	435	24	74	5.12	.28	.87	1.00
August	51	23	29	.60	.27	.34	.39
September	28	22	25	.33	.26	.29	.32
The year	1,060	15	64	12.48	.18	.75	10.22

Maitland River at Ben Miller

Location—At the highway bridge in the Village of Ben Miller, five miles south-west of the Town of Goderich, Township of Colborne, County of Huron.

Records Available—Discharge measurements from May, 1911. Daily gauge heights from June 1, 1911.

Drainage Area—950 square miles.

Gauge—Vertical steel staff gauge with enamelled face graduated in feet and inches and located on the downstream side of the first pier from the left abutment. The zero on the gauge (elev. 12.00) is referred to a bench mark (elev. 29.07) painted on the downstream side of the right wing wall.

Channel and Control—The channel is straight for 300 feet above and ¼ mile below the section. Both banks are low, clean and liable to overflow at high stages. The control is permanent during all stages, being composed of limestone.

Discharge Measurements—Made from the bridge at ordinary and high stages, and at a permanent wading section during the low water period.

Winter Flow—Ice greatly affects relation of gauge height to discharge. The section being wide and shallow, ice frequently freezes to the bottom, rendering meter measurements impossible.

Accuracy—For the low water a well-defined rating curve has been established.

Observer—E. Pfrimmer, Ben Miller P.O.

Discharge Measurements of Maitland River at Ben Miller in 1917

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Aug. 14....	Yeates, W.....	.....	122	.....	13.42	199	.....

Daily Gauge Height and Discharge of Maitland River at Ben Miller for 1916-7

Drainage Area, 950 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	13.21	113	13.33	171	14.25	1160	14.33	377	14.67	740	14.67	413	15.25	3420	14.33	1300	14.08	890	17.25	11600	13.50	270	13.42	222
2	13.17	104	13.33	171	14.12	950	14.33	377	14.67	740	14.67	413	15.83	5260	14.75	2160	14.04	835	17.83	14510	13.50	270	13.42	222
3	13.12	94	13.33	171	14.04	835	14.33	377	14.67	740	14.67	413	15.42	3910	14.92	2550	16.50	8030	16.50	8030	13.50	270	13.37	193
4	13.12	94	13.33	171	14.96	2650	14.33	377	14.67	740	14.67	413	15.42	3910	14.67	1990	15.67	4710	15.67	4710	13.54	302	13.37	193
5	13.12	94	13.33	171	14.08	890	14.42	460	14.67	740	14.67	413	15.50	4160	14.54	1710	15.00	2750	15.00	2750	13.50	270	13.33	171
6	13.12	94	13.29	150	14.17	1030	14.50	540	14.67	740	14.67	413	15.67	4710	14.42	1470	14.67	1990	14.67	1990	13.50	270	13.33	171
7	13.12	94	13.29	150	14.25	1160	14.67	740	14.67	740	14.67	413	15.58	4420	14.33	1300	14.92	2550	14.92	2550	13.50	270	13.31	161
8	13.12	94	13.29	150	14.33	1300	14.67	740	14.67	740	14.67	413	15.33	3650	14.25	1160	15.42	3910	15.42	3910	13.46	246	13.29	150
9	13.12	94	13.33	171	14.33	1300	14.67	740	14.67	740	14.67	413	15.00	2750	14.25	1160	15.67	4710	15.67	4710	13.46	246	13.29	150
10	13.12	94	13.33	171	14.33	1300	14.67	740	14.67	740	14.67	413	14.92	2550	14.21	1100	14.00	780	15.50	4160	13.42	222	13.25	130
11	13.12	94	13.33	171	14.17	880	14.67	740	14.67	740	15.92	2550	14.92	2550	14.17	1030	13.92	675	15.50	4160	13.42	222	13.25	130
12	13.08	87	13.33	171	14.00	650	14.67	740	14.67	740	15.37	1380	14.83	2340	14.08	890	13.83	575	15.25	3420	13.37	193	13.25	130
13	13.33	154	13.33	171	13.67	252	14.67	740	14.67	740	15.92	2550	14.75	2160	14.00	780	13.83	575	15.00	2750	13.37	193	13.21	110
14	13.29	137	13.37	193	13.54	177	14.67	740	14.67	740	16.00	2750	14.58	1800	13.92	675	14.33	1300	15.00	2750	13.42	222	13.21	110
15	13.25	125	13.37	193	13.50	105	14.67	740	14.67	740	16.08	2960	14.46	1550	13.83	575	14.75	2160	15.08	2960	13.42	222	13.21	110
16	13.29	137	13.37	193	13.50	105	14.67	740	14.67	740	16.08	2960	14.37	1380	13.75	490	14.58	1800	15.08	2960	13.42	222	13.21	110
17	13.37	172	13.42	222	13.67	140	14.67	740	14.67	740	16.33	3650	14.29	1230	13.71	450	14.33	1300	15.00	2750	13.37	193	13.17	94
18	13.46	221	13.42	222	14.37	740	14.67	740	14.67	740	16.33	3650	14.25	1160	13.71	450	14.08	890	15.00	2750	13.37	193	13.17	94
19	13.50	245	13.42	222	14.25	490	14.67	740	14.67	740	16.33	3650	14.25	1160	13.92	675	14.33	1300	14.58	1800	13.37	193	13.17	94
20	13.50	245	13.50	270	14.12	368	14.67	740	14.67	740	16.33	3650	14.25	1160	14.08	890	14.75	2160	14.42	1470	13.37	193	13.17	94
21	13.46	221	13.42	222	14.04	234	14.67	740	14.67	740	17.25	8250	14.75	2160	14.12	950	14.75	2160	14.33	1300	13.33	171	13.17	94
22	13.46	221	13.33	171	14.00	210	14.67	740	14.67	740	17.42	10970	14.71	2070	14.17	1030	14.25	1160	14.25	1160	13.33	171	13.17	94
23	13.46	221	13.48	258	14.00	210	14.67	740	14.67	740	16.42	7670	14.67	1990	14.67	1990	14.08	890	14.17	1030	13.42	222	13.17	94
24	13.46	221	13.67	413	13.92	166	14.67	740	14.67	740	17.25	11600	14.50	1630	15.00	2750	14.33	1300	13.96	730	13.42	222	13.17	94
25	13.42	197	13.52	286	13.87	140	14.67	740	14.67	740	18.17	16250	14.37	1380	15.42	3910	14.50	1630	13.87	615	13.42	222	13.17	94
26	13.42	197	13.58	334	13.83	120	14.67	740	14.67	740	18.17	16250	14.29	1230	15.42	3910	15.50	4160	13.75	490	13.42	222	13.17	94
27	13.39	180	13.71	450	13.92	166	14.67	740	14.67	740	17.58	13250	14.25	1160	15.25	3420	15.58	4420	13.71	450	13.50	270	13.17	94
28	13.39	180	13.69	431	13.92	166	14.67	740	14.67	740	17.00	10380	14.17	1030	14.58	1800	15.58	4420	13.67	415	13.50	270	13.17	94
29	13.39	180	14.00	780	13.92	166	14.67	740	.....	.....	16.50	8030	14.08	890	14.33	1300	15.42	3910	13.58	334	15.50	270	13.17	94
30	13.33	154	14.25	1160	13.92	166	14.67	740	.....	.....	16.08	6210	14.00	780	14.17	1030	15.33	3650	13.54	302	13.50	270	13.25	130
31	13.33	154	.....	.....	13.92	166	14.67	740	.....	.....	15.75	4980	.....	.....	14.08	890	.....	.....	13.50	270	13.46	246	.....	.....

Monthly Discharge of Maitland River at Ben Miller for 1916-7

Drainage Area, 950 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	245	87	152	.26	.09	.16	.18
November "	1,160	150	273	1.22	.16	.29	.32
December "	2,650	105	593	2.79	.11	.62	.71
January ..(1917)	740	377	678	.78	.40	.71	.82
February	740	740	740	.78	.78	.78	.81
March	16,250	413	4,765	17.11	.43	5.02	5.79
April	5,260	780	2,318	5.54	.82	2.44	2.72
May	3,910	450	1,477	4.12	.47	1.55	1.79
June.....	8,030	575	2,386	8.46	.61	2.51	2.80
July	14,510	270	3,025	15.27	.28	3.18	3.67
August	302	171	233	.32	.18	.25	.29
September	222	94	127	.23	.10	.13	.15
The year.....	16,250	87	1,404	17.11	.09	1.48	20.06

Nottawasaga River near Nicolston

Location—At McLean's Bridge, 4 miles north of the Town of Nicolston, near lot 5, concession 6, Township of Essa, County of Simcoe.

Records Available—Discharge measurements from June, 1912. Daily gauge heights from August 18, 1914.

Drainage Area—416 square miles.

Gauge—Vertical staff 0 to 12 feet on right abutment, upstream side. Zero on the gauge (elevation 4.00) is referred to B.M. (elevation 20.00) on tension rod of bridge 60 feet from initial point for soundings.

Channel and Control—The channel below the section is straight for about 600 feet. Above the section it is straight for about 100 feet, when it takes a sharp turn to the right, causing an angle at the bridge. Both banks and control are subject to change under high-water conditions.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—The relation of gauge height to discharge is affected by ice during the winter months and measurements are made to compute the winter flow.

Regulation—The dams above have little effect on this section.

Accuracy—These records, with the reduction made for the angle at section, can be considered good up to discharges of 800 second feet. There are not sufficient records available to compute discharges very accurately above gauge height 8.00 feet. The estimate made is probably close to the actual discharge.

Observer—John Scott, Egbert P.O.

Discharge Measurements of Nottawasaga River near Nicolston in 1917

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
May 25....	Yeates, W.....	90	422	1.07	7.32	454	.....
June 21....	Roberts, E.....	82	166	.91	6.08	150	.....

Daily Gauge Height and Discharge of Nottawasaga River near Nicolston for 1916-7

Drainage Area, 416 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	5.54	106	5.75	140	6.67	324	6.12	170	6.33	186	6.54	220	8.96	918	6.33	256	5.87	164	6.52	294	5.37	80	5.42	88
2	5.44	91	5.79	148	6.17	224	6.23	188	6.23	166	6.54	218	9.83	1205	6.46	282	5.98	186	8.71	843	5.67	125	5.44	91
3	5.44	91	5.75	140	6.17	224	6.12	162	6.19	158	6.50	210	10.46	1426	6.37	264	5.85	160	7.75	572	5.54	106	5.67	125
4	5.42	88	5.81	152	6.21	232	6.06	146	6.08	136	6.27	162	10.52	1447	6.46	282	5.85	160	6.83	356	5.44	91	5.69	128
5	5.54	106	6.10	210	6.21	232	6.21	172	6.37	194	6.50	208	9.37	1044	6.33	256	5.87	164	6.27	244	5.35	78	5.62	118
6	5.50	100	6.00	190	6.71	332	6.29	184	6.35	190	6.62	230	9.50	1090	6.42	274	5.83	156	6.02	194	5.46	94	5.58	112
7	5.48	97	5.92	174	6.29	248	6.33	188	6.37	194	6.54	218	9.46	1076	6.64	318	5.92	174	5.92	174	5.52	103	5.54	106
8	5.25	65	5.96	182	6.17	224	6.35	190	6.35	194	6.50	204	8.71	843	6.48	286	6.12	214	5.89	168	5.67	125	5.50	100
9	5.31	72	6.00	190	6.21	232	6.23	166	6.33	186	6.60	224	7.87	603	6.25	240	6.02	194	6.37	264	5.62	118	5.35	78
10	5.50	100	6.08	206	6.21	232	6.25	170	6.31	182	6.58	218	7.54	520	6.12	214	6.00	190	8.50	780	5.60	115	5.39	83
11	5.44	91	6.25	240	6.21	232	6.25	170	6.04	128	6.62	226	7.37	478	6.04	198	5.96	182	10.96	1611	5.58	112	5.39	83
12	5.56	109	5.87	154	6.10	210	6.25	170	6.31	182	6.83	266	7.56	525	5.87	164	5.77	144	9.35	1038	5.50	100	5.44	91
13	5.52	103	5.96	182	6.00	190	6.19	158	6.27	174	6.81	262	8.33	729	5.75	140	5.73	136	8.29	717	5.48	97	5.52	103
14	5.62	118	6.00	190	6.06	202	6.08	136	6.14	148	6.67	234	7.37	478	5.87	164	5.83	156	8.25	705	5.47	95	5.46	94
15	5.54	106	6.00	190	5.81	152	6.37	194	6.08	136	6.77	254	7.08	406	5.71	132	6.23	236	9.31	1024	5.48	97	5.46	94
16	5.44	91	5 87	154	5.71	132	6.25	170	6.25	170	6.77	254	6.94	378	5.69	128	5.96	182	8.79	867	5.50	100	5.35	78
17	5.67	96	5.96	182	5.67	125	6.17	154	6.21	162	7.62	453	6.67	324	5.71	132	5.92	174	7.60	535	5.46	94	5.46	94
18	5.81	152	5.75	140	5.83	156	6.08	136	6.19	158	8.08	593	6.62	314	5.73	136	5.89	168	7.27	453	5.37	80	5.44	91
19	5.87	164	5.96	182	5.64	121	6.21	162	6.27	174	7.98	593	6.67	324	5.75	140	6.83	356	7.00	390	5.33	74	5.48	97
20	6.83	356	5.96	182	5.64	121	6.17	154	6.35	190	8.42	756	7.04	398	5.83	156	6.77	344	6.73	336	5.39	83	5.44	91
21	7.06	402	5.96	182	5.67	125	5.98	119	6.33	186	8.21	693	8.08	655	5.96	182	6.14	218	6.48	286	5.35	78	5.48	97
22	6.58	306	6.04	198	5.64	118	6.25	170	6.42	202	9.00	930	8.33	729	6.02	194	5.81	152	6.17	224	5.37	80	5.48	97
23	6.08	206	6.00	190	5.75	132	6.21	162	6.33	184	9.75	1175	7.69	558	8.04	649	5.67	125	6.12	214	5.37	80	5.33	74
24	6.04	198	6.29	248	5.81	140	6.21	162	6.46	208	14.21	2904	6.96	382	8.00	635	6.04	198	5.87	164	5.48	97	5.42	88
25	5.85	160	6.21	232	5.94	162	6.25	170	6.14	144	16.00	3620	6.58	306	7.29	458	6.71	332	5.77	144	5.81	152	5.46	94
26	5.75	140	5.75	140	5.98	166	6.23	166	6.46	206	17.00	4020	6.52	294	7.12	415	6.21	232	5.73	136	5.46	94	5.42	88
27	5.83	156	6.08	206	5.94	154	6.31	182	6.46	206	15.79	3536	6.83	356	7.04	398	6.25	240	5.69	128	5.77	144	5.54	106
28	5.79	148	6.08	206	6.02	166	6.00	123	6.54	220	14.83	3152	6.71	332	7.00	390	5.96	182	5.64	121	5.58	112	5.58	112
29	5.71	132	6.25	240	6.02	162	6.23	166	.....	.....	12.29	2136	6.31	352	6.96	382	5.94	178	5.67	125	5.50	100	5.58	112
30	5.79	148	6.52	294	5.96	146	6.29	178	.....	.....	10.71	1514	6.37	264	6.75	340	6.14	218	5.64	121	5.52	103	5.42	88
31	5.71	132	.....	.....	6.00	150	6.29	178	.....	.....	9.33	1030	.....	.....	6.33	256	.....	.....	5.56	109	5.92	174	.....	.....

Monthly Discharge of Nottawasaga River near Nicolston for 1916-7

Drainage Area, 416 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October ... (1916)	402	65	143	.97	.16	.34	.39
November "	294	140	189	.71	.34	.45	.50
December "	332	118	186	.80	.28	.45	.50
January. (1917)	194	119	165	.47	.29	.40	.46
February	220	128	177	.53	.31	.42	.44
March	4,020	162	991	9.66	.39	2.38	2.74
April	1,447	264	625	3.48	.63	1.50	1.67
May	649	128	272	1.56	.31	.65	.75
June.....	356	125	197	.86	.30	.47	.52
July	1,611	109	430	3.88	.26	1.03	1.19
August	174	74	103	.42	.18	.25	.29
September	128	74	97	.31	.18	.23	.26
The year.....	4,020	65	299	9.66	.16	.72	9.76

Rocky Saugeen River near Markdale

Location—At the Glen Cross highway bridge, three-quarters of a mile above Hayward's Falls, near lot 5, concession 8, Township of Glenelg, County of Grey.

Records Available—Discharge measurements and daily gauge heights from June 8, 1915.

Drainage Area—96 square miles.

Gauge—Vertical staff 0 to 6 feet on the downstream side of the centre pier of bridge. The zero of gauge (elevation 0.00) is referred to a B.M. (elevation 29.65) painted on a rock projecting from bank 40 feet north from first telephone pole on left bank.

Channel and Control—The channel is straight for 200 feet above and 500 feet below the station. The bed and banks are permanent, as flood conditions do not exist on this stream.

Discharge Measurements—Made at a permanent wading section. When the river is extremely high measurements will be made from the bridge.

Winter Flow—Ice has but little affect at this section and the open water curve is at all times applicable.

Regulation—The dam above has little effect on the river stage at this section.

Accuracy—The rating curve is well defined except for maximum flows.

Observer—Arthur McNally, Markdale.

Discharge Measurements of Rocky Saugeen River near Markdale in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 4....	Roberts, E.	68	61	.83	1.14	50	.....
1917							
Jan. 7....	"	74	85	1.15	1.50	98	.....
Feb. 15....	Yeates, W....	50	55	1.20	1.31	66	.....
April 12....	Roberts, E.	75	191	1.55	2.54	296	.....
May 9....	"	81	124	1.36	1.96	169	.....
June 14....	"	78	113	1.29	1.77	145	.....
July 20....	"	80	139	1.41	2.04	196	.....
Aug. 3....	"	76	91	1.03	1.52	93	.....
Sept. 16....	Yeates, W....	68	69	.98	1.33	68	.....
Oct. 17....	"	75	87	1.05	1.52	91	.....

Daily Gauge Height and Discharge of Rocky Saugeen River near Markdale for 1916-7

Drainage Area, 96 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1.17	53	1.25	60	1.67	119	1.50	89	1.42	79	1.25	60	3.08	414	2.17	217	1.83	150	1.92	167	1.67	119	1.33	68
2	1.17	53	1.25	60	1.67	119	1.50	89	1.42	79	1.25	60	3.17	433	2.17	217	1.83	150	1.92	167	1.67	119	1.42	79
3	1.17	53	1.25	60	1.67	119	1.50	89	1.42	79	1.25	60	3.25	451	2.08	198	1.83	150	1.92	167	1.67	119	1.42	79
4	1.17	53	1.33	68	1.83	150	1.58	103	1.42	79	1.25	60	3.08	414	2.08	198	1.75	135	2.00	182	1.67	119	1.42	79
5	1.17	53	1.33	68	2.17	217	1.58	103	1.42	79	1.25	60	3.08	414	2.08	198	1.75	135	2.08	198	1.58	103	1.42	79
6	1.17	53	1.33	68	2.17	217	1.50	89	1.42	79	1.25	60	3.00	396	2.08	198	1.75	135	2.08	198	1.58	103	1.42	79
7	1.17	53	1.33	68	2.08	198	1.50	89	1.42	79	1.25	60	2.92	378	2.08	198	1.83	150	2.08	198	1.58	103	1.33	68
8	1.17	53	1.33	68	2.00	182	1.50	89	1.42	79	1.25	60	2.83	359	2.08	198	1.75	135	2.17	217	1.58	103	1.33	68
9	1.17	53	1.33	68	2.00	182	1.50	89	1.42	79	1.33	68	2.67	323	2.00	182	1.75	135	2.50	286	1.50	89	1.33	68
10	1.17	53	1.33	68	2.00	182	1.50	89	1.42	79	1.33	68	2.67	323	2.00	182	1.75	135	2.67	323	1.50	89	1.33	68
11	1.17	53	1.33	68	1.92	167	1.50	89	1.42	79	1.33	68	2.58	304	2.00	182	1.75	135	2.75	341	1.50	89	1.33	68
12	1.17	53	1.33	68	1.92	167	1.58	103	1.42	79	1.33	68	2.50	286	1.96	174	1.75	135	2.75	341	1.50	89	1.33	68
13	1.33	67	1.33	68	1.75	135	1.58	103	1.42	79	1.33	68	2.50	286	1.92	167	1.75	135	2.83	359	1.58	103	1.33	68
14	1.25	59	1.33	68	1.58	103	1.50	89	1.33	68	1.33	68	2.50	286	1.92	167	1.75	135	2.75	341	1.58	103	1.33	68
15	1.25	59	1.33	68	1.58	103	1.50	89	1.25	60	1.33	68	2.42	269	1.83	150	1.75	135	2.58	304	1.50	89	1.33	68
16	1.25	59	1.33	68	1.58	103	1.50	89	1.25	60	1.33	68	2.50	286	1.83	150	1.75	135	2.58	304	1.50	89	1.33	68
17	1.25	59	1.33	68	1.58	103	1.50	89	1.25	60	1.33	68	2.58	304	1.83	150	1.75	135	2.42	269	1.50	89	1.25	60
18	1.25	59	1.33	68	1.58	103	1.50	89	1.25	60	1.42	79	2.58	304	1.83	150	1.75	135	2.42	269	1.50	89	1.25	60
19	1.33	67	1.33	68	1.58	103	1.50	89	1.25	60	1.42	79	2.67	323	1.83	150	1.92	167	2.25	233	1.50	89	1.25	60
20	1.33	67	1.33	68	1.50	89	1.42	79	1.25	60	1.50	89	2.83	359	1.83	150	2.08	198	2.17	217	1.42	79	1.25	60
21	1.42	78	1.25	60	1.50	89	1.42	79	1.25	60	1.50	89	2.83	359	1.75	135	2.08	198	2.08	198	1.42	79	1.25	60
22	1.42	78	1.25	60	1.50	89	1.42	79	1.25	60	1.58	103	2.83	359	1.75	135	2.08	198	2.08	198	1.42	79	1.25	60
23	1.33	67	1.25	60	1.50	89	1.33	68	1.25	60	1.67	119	2.75	341	1.83	150	2.08	198	2.00	182	1.33	68	1.25	60
24	1.33	67	1.25	60	1.50	89	1.33	68	1.25	60	1.75	135	2.75	341	2.08	198	2.08	198	1.83	150	1.25	60	1.25	60
25	1.33	67	1.33	68	1.50	89	1.33	68	1.25	60	1.75	135	2.67	323	2.08	198	2.08	198	1.83	150	1.25	60	1.25	60
26	1.25	59	1.33	68	1.50	89	1.33	68	1.25	60	2.58	304	2.67	323	2.00	182	2.08	198	1.83	150	1.17	54	1.25	60
27	1.25	59	1.33	68	1.50	89	1.33	68	1.25	60	3.00	396	2.50	286	2.00	182	2.00	182	1.79	142	1.17	54	1.25	60
28	1.25	59	1.42	79	1.50	89	1.33	68	1.25	60	2.92	378	2.50	286	1.92	167	1.92	167	1.75	135	1.33	68	1.33	68
29	1.25	59	1.58	103	1.50	89	1.42	79	.....	....	2.92	378	2.33	250	1.92	167	1.92	167	1.75	135	1.33	68	1.33	68
30	1.25	59	1.67	119	1.50	89	1.42	79	.....	....	2.92	378	2.17	217	1.92	167	1.92	167	1.67	119	1.33	68	1.33	68
31	1.25	59	.....	....	1.50	89	1.42	79	.....	....	3.00	396	.....	....	1.92	167	....	....	1.67	119	1.33	68	.....	....

Monthly Discharge of Rocky Saugeen River near Markdale for 1916-7

Drainage Area, 96 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	78	53	59	.81	.55	.61	.70
November "	119	60	69	1.24	.62	.72	.80
December "	217	89	124	2.26	.93	1.29	1.49
January (1917)	103	68	85	1.07	.71	.89	1.03
February	79	60	69	.82	.62	.72	.75
March	396	60	134	4.13	.62	1.40	1.61
April	451	217	333	4.70	2.26	3.47	3.87
May	217	135	175	2.26	1.41	1.82	2.10
June	198	135	158	2.06	1.41	1.65	1.84
July	359	119	218	3.74	1.24	2.27	2.62
August	119	54	87	1.24	.56	.91	1.05
September	79	60	67	.82	.62	.70	.78
The year	451	53	132	4.70	.55	1.37	18.66

Saugeen River near Port Elgin

Location—At the highway bridge known as McCalder's Bridge, 4 miles north-east of the Town of Port Elgin, near lot 5, concession 12, Township of Saugeen, County of Bruce.

Records Available—Discharge measurements from July, 1911. Daily gauge heights from April 19, 1914.

Drainage Area—1,565 square miles.

Gauge—Vertical staff 0 to 12 feet on left abutment downstream side. Zero on gauge (elevation 4.00) is referred to a B.M. (elevation 25.00) painted on wooden hand-rail of bridge.

Channel and Control—The channel is straight for about 350 feet above and below the section. The bed of the stream, with two submerged piers at the section, is composed of fairly large boulders, which will only shift during high flood stages. The current is moderate and flows through two channels, which are separated by the centre pier of the bridge.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—Ice greatly affects relation of gauge height to discharge. Measurements are made during the winter to determine the flow.

Regulation—Fluctuations occur in the river stage at this section. This is no doubt caused by the plants at Walkerton, Chesley and Paisley.

Accuracy—Semi-daily reading should give a fair representative mean. The fluctuations that have been noted are not large, consequently the gauge height records can be classified as good. A well-defined curve is shown for flows up to 20,000 sec. feet. A slight angle in cross-section No. 1 may affect accuracy of meter measurements.

Observer—John Shanks, Southampton.

Discharge Measurements of Saugeen River near Port Elgin in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 5....	Yeates, W.....	191	673	.65	4.79	436	.....
1917							
Jan. 9....	Roberts, E.	197	904	1.70	6.58	1,533(a)	.....
Mar. 25....	"	210	2,326	5.71	12.87	13,285(b)	.....
" 26....	"	210	2,725	7,28	14.74	19,850(b)	.....
" 27....	"	210	2,796	7.55	15.08	21,113(b)	.....
" 28....	"	210	2,660	6.88	14.42	18,313(b)	.....
" 28....	"	210	2,630	6.77	14.29	17,797(b)	.....
" 29....	"	210	2,452	6.23	13.50	15,265(b)	.....
" 29....	"	210	2,357	5.91	13.00	13,936(b)	.....
Apr. 19....	"	210	1,233	2.33	7.62	2,872	.....
May 11....	"	197	1,004	1.73	6.56	1,742	.....
June 13....	"	195	906	1.58	6.08	1,433	.....
July 19....	"	210	1,271	2.66	7.85	3,387	.....
Aug. 2....	"	192	828	1.20	5.66	995	.....
Sept. 15....	Yeates, W.....	190	714	.85	5.08	610	.....
Oct. 16....	"	192	809	1.10	5.54	890	.....

(a) Section almost completely ice-covered.
(b) Surface velocities recorded and co-efficient applied.

Daily Gauge Height and Discharge of Saugeen River near Port Elgin for 1916-7

Drainage Area, 1,565 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	5.02	540	5.25	730	7.64	2870	6.83	1760	6.39	760	6.58	750	11.42	9220	7.67	2900	6.46	1700	8.00	3300	5.73	1110	5.29	760
2	4.98	520	5.29	760	7.08	2270	6.77	1710	6.35	730	6.69	840	11.56	9540	8.42	3830	6.42	1670	11.46	9310	5.64	1040	5.21	700
3	4.89	476	5.33	790	6.89	2080	6.60	1570	6.33	715	6.58	750	12.42	11790	8.37	3760	6.29	1560	11.25	8840	5.64	1040	5.21	700
4	4.83	452	5.25	730	6.64	1860	6.56	1540	6.25	655	6.58	750	11.71	9900	7.87	3140	6.25	1530	10.67	7580	5.67	1070	5.19	685
5	4.79	436	5.23	715	7.98	3280	6.48	1470	6.23	640	6.48	610	11.29	8930	7.58	2800	6.25	1530	10.04	6360	5.64	1040	5.17	670
6	4.75	422	5.19	685	8.00	3300	6.42	1430	6.23	640	6.50	690	11.33	9020	7.46	2670	6.17	1470	9.00	4640	5.60	1010	5.14	650
7	4.75	422	5.17	670	7.50	2710	6.50	1490	6.27	670	6.50	690	10.58	7400	7.31	2500	6.50	1730	7.75	3000	5.79	1160	5.17	670
8	4.73	415	5.06	590	7.35	2540	6.54	1520	6.25	655	6.52	710	10.08	6430	7.08	2270	6.42	1670	7.62	2840	5.81	1180	5.17	670
9	4.69	402	5.06	590	7.31	2400	6.54	1520	6.19	610	6.54	720	10.00	6290	6.87	2060	6.37	1630	8.96	4580	5.77	1150	5.14	650
10	4.56	365	5.08	605	7.33	2420	6.52	1430	6.17	600	6.58	750	9.81	5950	6.62	1840	6.31	1580	10.79	7830	5.64	1040	5.10	620
11	4.52	355	5.08	605	7.14	2230	6.34	1280	6.17	530	6.85	970	9.67	5700	6.52	1750	6.25	1530	11.33	9020	5.60	1010	5.10	620
12	4.52	355	5.10	620	6.87	1970	6.19	1080	6.23	570	7.31	1340	9.29	5080	6.39	1640	6.17	1470	11.12	8550	5.56	980	5.06	590
13	4.85	460	5.14	650	6.54	1680	6.21	1100	6.25	585	7.96	1870	9.12	4820	6.31	1580	6.12	1430	10.50	7240	5.50	930	5.04	580
14	4.87	468	5.17	670	6.14	1360	6.36	1220	6.21	560	8.44	2330	9.00	4640	6.21	1500	6.75	1960	9.62	5610	5.46	900	5.00	550
15	4.96	510	5.17	670	5.83	1110	6.37	1150	6.19	545	8.42	2210	8.62	4100	6.00	1330	6.64	1860	8.83	4390	5.44	880	5.00	550
16	5.10	580	5.17	670	5.92	1190	6.42	1190	6.17	530	8.37	2160	8.37	3760	5.98	1310	6.54	1770	8.42	3830	5.42	870	5.00	550
17	5.19	635	5.19	685	6.12	1350	6.46	1140	6.14	510	8.60	2290	8.21	3550	5.94	1280	6.29	1560	8.25	3600	5.42	870	5.00	550
18	5.29	695	5.21	700	6.31	1500	6.50	1170	6.17	530	9.17	2790	7.92	3200	5.94	1280	6.21	1500	8.21	3550	5.39	840	5.00	550
19	5.44	785	5.23	715	6.48	1630	6.50	1170	6.17	530	9.12	2620	7.64	2870	5.89	1240	6.17	1470	7.71	2950	5.35	810	5.00	550
20	5.46	795	5.27	745	6.44	1520	6.50	1090	6.17	530	9.04	2430	8.46	3880	5.87	1230	6.71	1920	7.37	2570	5.31	780	5.00	550
21	5.50	820	5.27	745	6.51	1580	6.50	1090	6.10	480	9.12	2410	8.67	4170	5.85	1210	7.33	2520	7.17	2360	5.29	760	5.00	550
22	5.54	850	5.25	730	6.56	1620	6.48	990	6.08	470	9.44	2640	8.58	4040	5.83	1190	6.92	2110	6.96	2150	5.27	750	4.98	535
23	5.48	810	5.27	745	6.64	1680	6.46	980	6.04	440	11.83	7920	8.54	3990	7.21	2400	6.75	1960	6.81	2010	5.25	730	4.92	495
24	5.42	770	5.31	780	6.54	1600	6.42	950	6.08	470	12.17	9800	8.52	3960	8.89	4480	7.29	2480	6.52	1750	5.31	780	4.87	460
25	5.39	755	5.33	795	6.48	1550	6.48	910	6.17	530	13.67	14920	8.46	3880	8.96	4580	7.44	2640	6.35	1610	5.54	960	4.83	430
26	5.33	720	5.42	870	6.48	1550	6.54	960	6.17	460	13.92	16450	8.42	3830	8.35	3740	7.14	2330	6.27	1550	5.58	990	4.77	390
27	5.29	695	5.83	1190	6.50	1570	6.56	900	6.27	530	15.00	20760	7.92	3200	8.02	3320	7.50	2710	6.14	1440	5.54	960	4.75	375
28	5.39	755	6.96	2150	6.55	1610	6.50	850	6.39	610	14.39	18220	7.37	2570	7.42	2620	7.25	2440	6.12	1430	5.46	900	4.75	375
29	5.35	730	7.39	2590	6.71	1740	6.44	800	.....	....	13.21	14100	7.17	2360	7.10	2290	7.50	2710	5.98	1310	5.29	760	4.75	375
30	5.31	705	7.77	3020	6.67	1630	6.42	790	.....	....	11.83	10210	6.87	2060	6.77	1970	7.62	2840	5.85	1210	5.37	830	4.96	520
31	5.25	670	....	....	6.69	1640	6.42	790	.....	....	11.08	8470	.....	.....	6.54	1770	....	.....	5.79	1160	5.37	830	.....	....

Monthly Discharge of Saugeen River near Port Elgin for 1916-7

Drainage Area, 1,565 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	850	355	593	.54	.23	.38	.44
November "	3,020	590	907	1.93	.38	.58	.65
December "	3,300	1,110	1,905	2.11	.71	1.22	1.41
January (1917)	1,760	790	1,195	1.12	.50	.76	.88
February	760	440	574	.49	.28	.37	.39
March.....	20,760	610	4,973	13.27	.39	3.18	3.67
April.....	11,790	2,060	5,338	7.53	1.32	3.41	3.80
May	4,580	1,190	2,306	2.93	.76	1.47	1.69
June	2,840	1,430	1,909	1.81	.91	1.22	1.36
July.....	9,310	1,160	4,115	5.95	.73	2.63	3.03
August	1,180	730	934	.75	.47	.60	.67
September.....	760	375	564	.49	.24	.36	.40
The year	20,760	355	2,121	13.27	.23	1.35	18.39

Saugeen River near Walkerton

Location—At the south line bridge, 3½ miles above the Town of Walkerton, near lot 39, concession 2, Township of Brant, County of Bruce.

Records Available—Discharge measurements from June, 1912. Daily gauge heights from March 26, 1914.

Drainage Area—850 square miles.

Gauge—Vertical staff 0 to 12 feet on right abutment. Zero on the gauge is 12.00 feet, which is referred to a B.M. (elevation 35.00) on tension rod of bridge.

Channel and Control—Channel is straight for about 500 feet above and below the section. Both banks are high, and do not overflow. The river bed is composed of clay, one channel existing at all stages.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—Ice greatly affects relation of gauge height to discharge. Measurements are made to determine the winter flow.

Regulation—The dam at Walkerton, about 3½ miles downstream, has no effect on the river stage at this section.

Accuracy—Weeds below the section have a decided effect on the accuracy of the measurements. During the period when weeds are present, a different rating curve has been established. There are not sufficient records available to define the two curves at all stages, and therefore discharges cannot be classed as very good.

Observer—James Preston, Walkerton.

Discharge Measurements of Saugeen River near Walkerton in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 4....	Yeates, W.	119	436	.54	15.08	234	.....
1917							
Jan. 9....	Roberts, E.....	120	511	1.28	16.33	653 (a)	.....
" 26....	"	120	463	1.07	16.21	494 (a)	.....
Feb. 23....	"	115	455	1.07	16.71	486 (a)	.....
Mar. 27....	"	135	2000	6.45	26.90	12,900 (b)	.....
April 18....	"	132	745	1.94	17.58	1,443	.....
May 10....	"	125	626	1.63	16.70	1,018	.....
June 13....	"	117	539	1.18	15.96	638	.....
July 20....	"	128	727	2.03	17.50	1,478	.....
Aug. 4....	"	114	505	1.06	15.67	537	.....
Sept. 16....	Yeates, W.	111	459	.75	15.29	344	.....
Oct. 18....	"	113	483	.82	15.45	396	.....

(a) Ice measurement.
(b) Surface velocities recorded and co-efficient applied.

Daily Gauge Height and Discharge of Saugeen River near Walkerton for 1916-7

Drainage Area, 850 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	15.12	246	15.46	374	17.83	1700	16.25	635	16.25	462	16.92	590	21.73	5340	17.25	1300	16.29	765	19.87	3410	15.67	458	15.25	290
2	15.29	297	15.33	322	17.42	1410	16.25	630	16.29	470	16.71	485	22.87	6690	17.62	1550	16.17	705	21.58	5180	15.71	475	15.37	338
3	15.21	273	15.42	358	16.83	1040	16.33	670	16.17	422	16.62	446	23.62	7630	17.71	1620	16.12	680	19.94	3480	15.58	422	15.35	330
4	15.12	246	15.50	390	16.46	850	16.21	605	16.33	470	16.62	446	23.21	7100	17.56	1510	16.08	660	18.83	2470	15.50	390	15.42	358
5	15.25	255	15.46	374	17.08	1180	16.17	585	16.37	470	16.71	485	21.54	5130	17.37	1380	16.04	640	17.79	1670	15.50	390	15.35	330
6	15.21	273	15.37	338	17.62	1550	16.12	555	16.46	520	16.73	495	20.87	4410	17.29	1320	16.04	640	17.21	1270	15.92	580	15.21	274
7	15.21	273	15.33	322	17.62	1550	16.29	640	16.54	530	16.83	545	20.42	3960	17.12	1200	16.08	660	16.92	1080	15.96	600	15.17	258
8	15.12	246	15.37	338	17.25	1300	16.37	675	16.46	480	16.83	545	19.50	3070	16.96	1110	16.46	850	18.42	2130	15.79	515	15.21	274
9	15.04	222	15.46	374	17.12	1140	16.37	675	16.46	470	16.83	545	19.00	2620	16.79	1020	16.50	870	18.92	2550	15.81	525	15.17	258
10	15.04	222	15.50	390	17.25	1230	16.29	630	16.54	500	16.75	505	18.52	2210	16.67	955	16.46	850	20.29	3830	15.52	398	15.21	274
11	15.25	255	15.46	374	17.12	1140	16.12	560	16.46	446	16.96	610	18.54	2220	16.64	940	16.29	765	20.54	4080	15.56	414	15.23	282
12	15.04	222	15.42	358	16.92	1030	16.37	670	16.33	406	17.58	920	18.58	2250	16.50	870	16.04	640	20.62	4160	15.54	406	15.19	266
13	15.29	297	15.58	422	16.37	755	16.17	530	16.50	462	17.75	1000	18.67	2330	16.33	785	15.92	580	19.92	3460	15.50	390	15.21	274
14	15.37	328	15.42	358	15.96	550	16.08	510	16.50	454	17.96	1120	18.71	2360	16.29	765	16.19	715	19.58	3140	15.48	382	15.12	238
15	15.29	297	15.37	338	15.83	485	16.29	610	16.54	458	17.71	985	18.25	2000	16.21	725	16.42	830	19.67	3220	15.52	398	15.21	274
16	15.37	328	15.46	374	15.29	266	16.29	605	16.50	442	17.67	965	17.87	1730	16.04	640	16.35	795	19.17	2770	15.48	382	15.12	238
17	15.46	364	15.42	358	16.04	590	16.21	555	16.62	470	18.12	1220	17.62	1550	15.96	600	16.08	660	18.50	2190	15.39	346	15.08	222
18	15.50	380	15.42	358	16.17	655	16.25	570	16.46	454	18.04	1170	17.54	1500	15.92	580	15.98	610	17.96	1790	15.50	390	15.10	230
19	15.58	412	15.25	290	16.25	645	16.29	580	16.42	442	17.96	1120	17.54	1500	15.96	600	17.42	1410	17.58	1530	15.44	366	15.21	274
20	15.71	470	15.33	322	16.46	750	16.33	600	16.50	430	17.96	1120	18.33	2050	16.54	890	17.75	1650	17.42	1410	15.33	322	15.17	258
21	15.79	505	15.25	290	16.50	770	16.21	535	16.58	462	17.79	1020	19.50	3070	16.62	930	17.25	1300	17.29	1320	15.37	338	15.12	238
22	15.75	487	15.25	290	16.50	770	16.25	560	16.54	458	18.29	1465	19.58	3140	16.75	995	16.71	975	17.00	1130	15.33	322	15.17	258
23	15.67	433	15.29	306	16.17	605	16.33	565	16.69	475	19.50	2530	19.29	2880	17.62	1550	16.46	850	16.71	975	15.46	374	15.14	246
24	15.54	396	15.62	438	16.21	625	16.37	575	16.62	446	20.23	3370	18.54	2220	18.12	1900	17.54	1500	16.50	870	15.73	485	15.04	206
25	15.50	380	15.62	438	16.04	540	16.33	545	16.46	382	20.62	3960	17.98	1810	18.60	2270	17.46	1440	16.29	765	15.77	505	15.10	230
26	15.54	396	15.54	406	16.17	605	16.33	555	16.71	485	27.00	13130	17.64	1570	18.54	2220	17.69	1600	16.12	680	15.69	466	15.12	238
27	15.37	328	15.75	495	16.29	665	16.29	530	16.83	545	27.00	13130	17.58	1530	17.75	1650	17.79	1670	16.12	680	15.58	422	15.14	246
28	15.42	348	15.92	580	16.29	665	16.21	470	16.87	565	26.12	11440	17.42	1410	17.25	1300	17.37	1330	15.96	600	15.50	390	15.27	298
29	15.37	328	16.42	830	16.21	620	16.21	462	.....	.....	24.54	8890	17.46	1440	16.79	1020	17.33	1350	15.83	535	15.52	398	15.33	322
30	15.33	312	17.83	1700	16.12	575	16.42	560	.....	.....	21.42	5000	17.23	1280	16.50	870	17.46	1440	15.83	535	15.37	338	15.35	330
31	15.46	364	.....	.....	16.12	570	16.29	490	.....	.....	20.96	4500	.....	....	16.33	785	.....	.....	15.69	466	15.37	338	.....	....

Monthly Discharge of Saugeen River near Walkerton for 1916-7

Drainage Area, 850 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October .. (1916)	505	222	328	.59	.26	.39	.45
November ''	1,700	290	430	2.00	.34	.51	.57
December ''	1,700	266	866	2.00	.31	1.02	1.18
January .. (1917)	675	462	579	.79	.54	.68	.78
February	565	382	467	.66	.45	.55	.57
March	13,130	446	2,705	15.45	.52	3.18	3.67
April	7,630	1,280	2,933	8.98	1.51	3.45	3.85
May.....	2,270	580	1,156	2.67	.68	1.36	1.57
June.....	1,670	610	983	1.96	.72	1.16	1.29
July.....	5,180	466	2,045	6,09	.55	2.41	2.78
August.....	600	322	418	.71	.38	.49	.56
September.....	358	206	272	.42	.24	.32	.36
The year	13,130	206	1,103	15.45	.24	1.29	17.62

Sydenham River near Owen Sound

Location—At the highway bridge above the Town of Owen Sound's filtration plant, near lot 9, concession 1, Township of Derby, County of Grey.

Records Available—Discharge measurements and daily gauge heights from June 9, 1915.

Drainage Area—71 square miles.

Gauge—Vertical staff 0 to 6 feet on upstream side of first pier from right abutment. Zero on the gauge is 0.00.

Channel and Control—The channel is straight for 200 feet above and below the section, both banks are low, but do not overflow, the stream never assuming flood proportions. The bed is composed of solid rock, with two channels during the low-water period. During the high-water stages all the water is confined between the two abutments of the bridge.

Discharge Measurements—Made from the bridge during the high-water period, and from a permanent wading section located 30 feet upstream during the low stages.

Winter Flow—Ice has little effect.

Regulation—The Town of Owen Sound has a dam 300 feet above this section that is used to supply water for domestic uses.

Diversions—An additional 750,000 gallons of water per day should be added to the daily flow at this section, which is the approximate amount diverted.

Accuracy—There are not sufficient readings to define a curve at all stages. Discharges between gauge heights .90 and 1.40 are fair.

Observer—Myrtle Cook, Ashley P.O.

Discharge Measurements of Sydenham River near Owen Sound in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 4....	Yeates, W....	46	19	.91	.92	18	.....
1917							
Jan. 6....	Roberts, E....	57	36	2.02	1.35	74	.....
Feb. 17....	Yeates, W.....	39	22	1.42	1.67	31(a)	.....
Mar. 23....	Roberts, E.....	69	81	2.95	1.96	240(b)	.....
Apr. 11....	"	65	75	3.46	1.87	261	.....
May 9....	"	61	49	2.29	1.50	112	.....
June 14....	"	61	49	2.21	1.50	108	.....
July 16....	"	63	59	2.57	1.67	151	.....
Aug. 2....	"	45	28	1.60	1.17	45	.....
Sept. 15....	Yeates, W.....	48	23	1.13	0.98	25	.....
Oct. 17....	"	45	26	1.28	1.10	33	.....

(a) Ice measurement.
(b) Some ice at sides of section.

Daily Gauge Height and Discharge of Sydenham River near Owen Sound for 1916-7

Drainage Area, 71 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1.00	26	1.04	30	1.67	157	1.33	69	1.79	45	1.87	57	2.29	523	1.67	157	1.33	69	1.54	115	1.17	45	1.04	30
2	0.92	19	1.04	30	1.92	283	1.33	69	1.83	51	1.92	64	2.33	550	1.67	157	1.33	69	1.67	157	1.17	45	1.04	30
3	0.92	19	1.08	34	1.83	229	1.33	69	1.79	45	2.00	78	2.37	576	1.75	190	1.33	69	1.75	190	1.17	45	1.04	30
4	0.87	15	1.08	34	1.75	190	1.33	69	1.75	40	1.96	71	2.42	608	1.71	172	1.29	63	1.75	190	1.12	39	1.04	30
5	0.87	15	1.04	30	1.67	157	1.33	69	1.75	40	1.92	64	2.37	576	1.67	157	1.29	63	1.62	139	1.12	39	1.00	26
6	0.87	15	1.04	30	1.67	157	1.33	69	1.83	51	1.87	57	2.33	550	1.62	139	1.33	69	1.50	104	1.12	39	1.00	26
7	0.87	15	1.04	30	1.67	157	1.33	61	1.75	40	1.83	51	2.29	523	1.58	126	1.42	86	1.50	104	1.12	39	1.00	26
8	0.92	19	1.04	30	1.67	157	1.33	53	1.67	31	1.83	51	2.21	471	1.50	104	1.50	104	1.75	190	1.12	39	1.00	26
9	0.92	19	1.08	34	1.67	157	1.37	52	1.62	26	1.79	45	2.08	387	1.50	104	1.50	104	2.08	387	1.08	34	1.00	26
10	0.92	19	1.08	34	1.67	157	1.42	52	1.58	22	1.75	40	1.96	309	1.50	104	1.50	104	2.67	771	1.08	34	1.00	26
11	0.92	19	1.08	34	1.67	157	1.46	51	1.71	35	1.87	57	1.92	283	1.46	95	1.46	95	2.62	738	1.08	34	1.00	26
12	0.92	19	1.08	34	1.62	139	1.50	49	1.79	45	1.83	51	1.87	253	1.42	86	1.37	77	2.50	660	1.08	34	1.00	26
13	0.96	22	1.04	30	1.62	139	1.46	37	1.83	51	1.79	45	1.83	229	1.42	86	1.42	86	2.33	550	1.08	34	1.00	26
14	1.00	26	1.04	30	1.58	126	1.46	32	1.67	31	1.79	45	1.83	229	1.37	77	1.54	115	2.12	413	1.12	39	1.00	26
15	1.00	26	1.04	30	1.54	115	1.42	23	1.58	22	1.83	51	1.83	229	1.37	77	1.58	126	2.00	335	1.12	39	1.00	26
16	1.00	26	1.08	34	1.50	104	1.42	19	1.58	22	1.87	57	1.79	208	1.37	77	1.58	126	1.87	253	1.12	39	1.00	26
17	1.04	30	1.08	34	1.46	95	1.46	18	1.62	26	1.83	51	1.71	172	1.33	69	1.50	104	1.79	208	1.12	39	0.96	22
18	1.04	30	1.08	34	1.46	95	1.50	17	1.67	31	1.83	51	1.67	157	1.33	69	1.46	95	1.75	190	1.08	34	0.96	22
19	1.08	35	1.08	34	1.42	86	1.54	19	1.71	35	1.79	63	1.67	157	1.33	69	1.50	104	1.67	157	1.08	34	0.96	22
20	1.12	40	1.08	34	1.37	77	1.50	16	1.75	40	1.79	80	1.75	190	1.33	69	1.50	104	1.62	139	1.08	34	0.96	22
21	1.17	46	1.08	34	1.33	69	1.71	35	2.00	78	1.83	112	1.87	253	1.29	63	1.46	95	1.54	115	1.08	34	0.96	22
22	1.17	46	1.08	34	1.29	63	1.83	51	1.87	57	1.83	143	2.00	335	1.33	69	1.46	95	1.50	104	1.08	34	0.96	22
23	1.17	46	1.08	34	1.29	63	2.04	86	1.75	40	2.21	406	1.96	309	1.46	95	1.50	104	1.50	104	1.08	34	0.96	22
24	1.12	40	1.08	34	1.25	57	1.96	71	1.75	40	2.50	660	1.83	229	1.54	115	1.50	104	1.42	86	1.12	39	0.96	22
25	1.08	35	1.08	34	1.25	57	1.83	51	1.79	45	2.67	771	1.75	190	1.67	157	1.50	104	1.37	77	1.17	45	0.96	22
26	1.08	35	1.12	39	1.25	57	1.75	40	1.83	51	2.71	796	1.75	190	1.67	157	1.50	104	1.33	69	1.17	45	0.96	22
27	1.04	30	1.21	51	1.25	57	1.67	31	1.71	35	2.75	822	1.71	172	1.58	126	1.46	95	1.29	63	1.17	45	0.96	22
28	1.04	30	1.33	69	1.29	63	2.04	86	1.75	40	2.75	822	1.67	157	1.50	104	1.42	86	1.25	57	1.12	39	0.96	22
29	1.04	30	1.42	86	1.29	63	1.83	51	....	...	2.58	712	1.62	139	1.42	86	1.46	95	1.25	57	1.08	34	0.96	22
30	1.00	26	1.50	104	1.33	69	1.62	26	....	...	2.25	497	1.62	139	1.37	77	1.50	104	1.21	51	1.08	34	1.00	26
31	1.00	26	....	...	1.33	69	1.67	31	....	...	2.25	497	....	...	1.37	77	....	...	1.17	45	1.04	30	....	...

Monthly Discharge of Sydenham River near Owen Sound for 1916-7

Drainage Area, 71 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October...(1916)	46	15	27	.65	.23	.38	.44
November "	104	30	39	1.47	.42	.55	.61
December "	283	57	117	3.99	.80	1.65	1.90
January .. (1917)	86	16	47	1.21	.23	.66	.76
February	78	22	40	1.10	.31	.56	.58
March	822	40	238	11.58	.56	3.35	3.86
April.....	608	139	310	8.57	1.96	4.37	4.87
May	190	63	107	2.68	.89	1.51	1.74
June.....	126	63	94	1.77	.89	1.32	1.47
July	771	45	220	10.86	.63	3.10	3.57
August	45	30	38	.63	.42	.54	.62
September	30	22	25	.42	.31	.35	.39
The year	822	15	109	11.58	.23	1.53	20.83

Thames River (Main Stream) near Byron

Location—At the highway bridge known as Kilworth Bridge, 2 miles north-west of the Town of Byron, near the Village of Komoka, Township of Delaware, County of Middlesex.

Records Available—Monthly discharge measurements from March, 1912. Daily gauge heights from March 13, 1914.

Drainage Area—1,270 square miles.

Gauge—Vertical staff 0 to 12 feet on centre pier. The zero on gauge (elevation 6.00), which has remained unchanged since established, is referred to a B.M. (elevation 31.21) on downstream side of right abutment.

Channel and Control—The channel is straight above and below section for about 600 feet. The banks are high, and do not overflow or shift to a great extent. The control, however, is not stationary under high-water conditions. The velocity is high.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—Ice is present during the winter period, and measurements are made to determine the winter flow.

Accuracy—During flood stages the high velocity necessitates the taking of surface readings. The station rating curve is fairly well defined for ordinary flows.

Observer—James Bourne, Komoka.

Discharge Measurements of Thames River (Main Stream) near Byron in 1917

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Mar. 8....	Roberts, E.....	105	204	3.42	8.58	699(a)	.....
" 13....	"	241	1,126	5.48	10.62	6,178(b)	.....
" 25....	Yeates, W.	254	1,996	7.16	14.08	14,294(b)	.....
" 26....	"	250	1,594	6.46	12.52	10,294(b)	.....
" 27....	"	243	1,272	5.63	11.21	7,155(b)	.....
" 28....	"	241	1,175	5.57	10.79	6,548(b)	.....
May 15....	"	203	309	2.10	6.98	620	.....
June 19....	Roberts, E.....	207	391	3.00	7.37	1,173	.....
July 4....	Yeates, W.....	232	635	3.06	8.48	2,578	.....
Aug. 16....	Roberts, E.....	192	215	1.22	6.52	263	.....
Oct. 24....	Yeates, W	201	290	2.04	6.89	590	.....

(a) Ice measurement taken above regular section.
(b) Surface velocities recorded and co-efficient applied. Heavy swell at gauge.

Daily Gauge Height and Discharge of Thames River (Main Stream) near Byron for 1916-7

Drainage Area, 1,270 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	6.46	208	6.46	185	7.08	835	7.42	875	8.04	215	9.00	1205	9.33	3780	7.25	1030	7.87	1770	7.75	1630	6.54	265	6.33	55
2	6.42	176	6.50	225	6.87	600	7.42	655	8.00	175	8.67	820	11.21	7310	7.75	1630	7.96	1880	11.08	7030	6.46	185	6.46	185
3	6.42	176	6.50	225	6.67	395	7.42	655	7.92	95	8.58	725	12.46	10170	8.67	2800	7.62	1470	9.54	4120	6.67	395	6.50	225
4	6.37	142	6.50	225	6.75	475	7.42	655	7.50	0	8.58	725	10.29	5450	7.92	1830	7.42	1230	8.46	2510	6.50	225	6.50	225
5	6.33	118	6.42	145	6.67	395	7.71	975	7.50	0	8.58	725	9.42	3930	7.58	1420	7.33	1120	7.87	1770	6.50	225	6.46	185
6	6.33	118	6.42	145	6.67	395	8.17	1530	7.71	0	8.42	545	11.04	6950	7.42	1230	7.62	1470	7.50	1320	6.62	345	6.42	145
7	6.33	118	6.37	95	6.75	475	9.04	1430	7.79	10	8.50	635	11.25	7390	7.50	1320	10.50	5850	7.17	930	6.62	345	6.54	265
8	6.33	118	6.33	55	6.75	475	8.96	1300	7.58	0	8.50	635	10.33	5520	7.33	1120	9.96	4850	7.25	1030	6.62	395	6.54	265
9	6.33	118	6.33	55	6.75	475	8.96	1300	7.58	0	8.67	820	8.71	2860	7.29	1070	8.75	2910	8.04	1970	6.50	225	6.54	265
10	6.25	75	6.42	145	6.67	295	8.62	900	7.58	0	8.67	1290	8.37	2400	7.75	1630	8.08	2020	10.79	6420	6.79	515	6.50	225
11	6.25	75	6.50	225	6.50	125	8.33	580	7.54	0	9.33	2610	8.00	1920	7.46	1280	7.58	1420	11.54	8000	6.71	435	6.50	225
12	6.25	75	6.46	185	6.58	205	8.17	415	7.25	0	11.58	7240	8.08	2020	7.29	1070	7.33	1120	9.83	4620	6.67	395	6.33	55
13	6.33	118	6.42	145	6.75	375	8.33	580	7.54	0	10.92	6700	7.92	1830	7.08	835	7.33	1120	8.92	3160	6.71	435	6.50	225
14	6.37	142	6.42	145	6.67	295	8.42	680	7.83	8	10.62	6080	7.71	1580	7.04	790	7.79	1670	8.46	2510	6.62	345	6.33	55
15	6.46	208	6.42	145	6.75	375	8.50	765	7.75	0	9.83	4620	7.37	1170	6.79	515	8.21	2190	8.42	2460	6.58	305	6.50	225
16	6.50	240	6.33	55	7.33	890	8.50	765	7.87	18	9.33	3780	7.29	1070	6.42	145	7.87	1770	8.42	2460	6.62	345	6.33	55
17	6.50	240	6.33	55	7.50	1085	8.42	680	7.67	0	10.67	6190	7.21	975	6.75	475	7.37	1170	7.67	1530	6.50	225	6.50	225
18	6.46	208	6.42	145	7.50	1085	7.87	45	8.00	125	10.42	5690	7.12	875	6.75	475	7.29	1070	11.37	7640	6.50	225	6.33	55
19	6.42	176	6.54	265	7.67	1290	7.75	0	8.08	205	10.42	5690	7.12	875	6.75	475	7.29	1070	10.96	6780	6.50	225	6.37	95
20	6.46	208	6.42	145	7.75	1385	7.79	10	7.92	45	9.71	4410	6.96	700	6.75	475	7.25	1030	10.96	6780	6.50	225	6.37	95
21	6.62	336	6.33	55	7.75	1385	7.83	20	7.62	0	9.54	4120	7.08	835	7.46	1280	7.12	875	9.50	4050	6.50	225	6.37	95
22	6.75	440	6.33	55	7.33	780	7.67	0	7.83	8	10.00	4920	7.58	1420	8.00	1920	7.04	790	8.62	2730	6.50	225	6.37	95
23	6.71	408	6.37	95	7.25	690	7.62	0	7.87	18	15.08	17950	7.87	1770	7.79	1673	6.92	655	7.96	1880	6.37	95	6.33	55
24	6.58	304	6.50	225	7.25	690	7.92	95	7.83	8	12.67	10710	7.71	1580	10.33	5520	6.79	515	7.71	1580	6.54	265	6.33	55
25	6.50	240	6.58	305	7.25	690	7.87	45	7.83	8	15.71	20030	7.92	1830	11.21	7310	6.83	560	7.42	1230	6.62	345	6.46	185
26	6.50	240	6.50	225	7.33	780	8.04	215	7.83	8	13.83	13970	7.54	1370	12.54	10370	7.04	790	6.92	655	6.58	305	6.33	55
27	6.42	176	6.42	145	7.33	875	7.83	20	7.92	45	12.25	9650	7.42	1230	10.33	5520	7.46	1280	6.75	475	6.50	225	6.29	22
28	6.42	176	6.46	185	7.42	765	7.79	10	8.12	245	11.17	7220	7.46	1280	9.25	3660	11.37	7640	6.87	600	6.54	265	6.42	145
29	6.42	176	6.62	345	7.42	765	7.58	0	8.33	455	10.75	6250	7.57	1170	8.54	2620	10.12	5140	6.92	655	6.33	55	6.33	55
30	6.46	208	6.67	395	7.42	765	7.67	0	.....	.....	10.21	5300	7.17	930	8.21	2190	9.54	4120	6.75	475	6.67	395	6.50	225
31	6.46	208	6.87	600	7.54	900	7.79	10	.....	.....	9.46	3990	7.08	835	7.87	1770	9 71	4410	6.54	265	6.67	395	6.33	55
	6.50	240	....	.....	7.50	855	7.96	135	.....	.....	8.71	2860	.....	.....	7.62	1470	.....	.....	6.46	185	6.42	145	.....	....

Monthly Discharge of Thames River (Main Stream) near Byron for 1916-7

Drainage Area, 1,270 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	440	75	197	.35	.06	.16	.18
November "	600	55	186	.47	.04	.15	.17
December "	1,385	125	690	1.09	.10	.54	.62
January (1917)	1,530	0	453	1.20	.00	.36	.42
February	455	0	60	.36	.00	.05	.05
March	20,030	545	5,242	15.77	.43	4.13	4.76
April	10,170	700	2,738	8.01	.55	2.16	2.41
May	10,370	145	2,143	8.17	.11	1.69	1.95
June	7,640	515	2,130	6.02	.41	1.68	1.87
July	8,000	185	2,667	6.30	.15	2.10	2.42
August	515	55	290	.41	.04	.23	.27
September	265	22	143	.21	.02	.11	.12
The year	20,030	0	1,424	15.77	.00	1.12	15.22

Thames River (North Branch) near Fanshawe

Location—At the highway bridge near Fanshawe Post Office, between lots 8 and 9, concessions 4 and 5, Township of London, County of Middlesex.

Records Available—Daily gauge heights and discharge measurements from May 13, 1915.

Drainage Area—585 square miles.

Gauge—Vertical staff 0 to 12 feet on right abutment, downstream side. Elevation of zero on gauge 4.00 is referred to a B.M. (elevation 30.00) on tension rod, downstream side, 170 feet from the initial point of soundings.

Channel and Control—The channel is straight above and below section for 500 feet. The bed of the stream is composed of clay and gravel, the banks are high and will not overflow. The channel and control is shifting during high-water periods.

Discharge Measurements—Made from the bridge and at a permanent wading section about 500 feet above during low water.

Accuracy—This curve is fairly well defined.

Observer—Allen Donley, London.

Discharge Measurements of Thames River (North Branch) near Fanshawe in 1917

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Feb. 9....	Yeates, W.....	30	40	2.11	6.92	84 (a)	.....
Mar. 7....	Roberts, E.....	88	229	.86	7.50	197 (b)	.....
" 14....	"	171	979	2.38	9.58	2,331 (c)	.....
" 25....	Yeates, W	171	1,235	4.19	11.08	5,178 (d)	.....
" 26....	"	171	1,201	3.80	10.87	4,565 (d)	.....
" 27....	"	171	1,133	3.51	10.46	3,980 (d)	.....
" 28....	"	171	1,064	3.13	10.08	3,330 (d)	.....
May 16....	"	90	118	1.69	6.89	200 (e)	.....
June 19....	Roberts, E.....	95	124	1.80	6.99	223	.....
July 4....	Yeates. W.....	117	774	1.41	8.38	1,091	.....
Aug. 16....	Roberts, E.....	35	33	.....	6.46	82	.....
Sept. 30....	Yeates, W.....	31	24	.....	6.25	44	.....
Oct. 24....	"	88	120	.....	6.89	186	.....

(a) Ice measurement. Not taken at regular section.
(b) Ice measurement taken 350 feet above regular section.
(c) Ice at sides may have effect.
(d) Some surface velocities observed and co-efficient applied.
(e) Not taken at regular section.

Daily Gauge Height and Discharge of Thames River (North Branch) near Fanshawe for 1916-7

Drainage Area, 585 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	6.54	58	6.23	35	6.92	171	7.46	299	6.92	99	6.98	91	8.67	1370	7.14	251	7.71	525	8.83	1560	6.56	87	6.27	40
2	6.48	51	6.27	41	6.98	189	7.31	239	7.08	135	7.58	267	9.96	3030	7.73	540	7.64	484	10.04	3150	6.50	75	6.54	83
3	6.52	56	6.23	35	7.04	211	7.21	199	7.08	135	7.75	337	10.14	3300	7.48	400	7.52	420	9.33	2160	6.44	66	6.35	53
4	6.39	41	6.29	44	7.06	219	7.04	150	7.00	115	7.69	311	9.94	3000	7.29	311	7.67	500	9.10	1880	6.37	56	6.17	26
5	6.29	31	6.23	35	6.96	183	7.48	307	7.00	115	7.67	303	9.62	2550	7.19	271	7.62	470	8.79	1510	6.27	41	6.35	53
6	6.27	30	6.27	41	6.71	118	8.56	1040	7.00	115	7.56	259	9.14	1930	7.14	251	7.50	410	8.73	1440	6.29	44	6.31	47
7	6.19	23	6.19	29	6.64	103	8.54	1030	7.04	125	7.56	219	8.87	1600	7.06	219	7.79	585	8.42	1100	6.23	35	6.37	56
8	6.19	23	6.10	18	6.79	138	8.46	955	7.00	115	7.52	203	9.00	1760	7.12	243	7.75	555	8.21	910	6.21	32	6.42	63
9	6.14	20	6.12	20	6.62	79	8.25	780	6.87	70	7.54	211	8.67	1370	7.29	311	7.54	430	7.83	610	6.23	35	6.42	63
10	6.08	17	6.25	38	7.29	271	8.46	955	6.85	68	7.56	219	8.29	980	7.39	356	7.44	380	9.92	2970	6.33	50	6.35	53
11	6.10	18	6.60	95	7.31	279	8.73	1210	6.83	64	7.79	311	8.27	965	7.39	356	7.39	356	8.87	1600	6.50	75	6.31	47
12	6.04	14	6.60	95	7.27	263	7.69	405	6.85	68	9.87	2200	8.08	805	7.50	410	7.33	329	8.37	1050	6.46	69	6.27	40
13	6.06	16	6.42	63	7.25	255	7.56	342	6.77	55	10.92	3770	8.04	770	7.27	303	7.31	320	8.12	835	6.31	47	6.21	32
14	6.14	20	6.39	59	7.14	211	7.60	360	6.79	59	9.58	1860	7.73	540	7.04	211	7.27	303	7.75	555	6.23	35	6.19	29
15	6.19	23	6.29	44	7.00	165	7.48	307	6.81	62	9.44	1690	7.73	540	6.85	153	7.19	271	8.04	770	6.31	47	6.14	23
16	6.14	20	6.29	44	6.71	97	7.37	263	6.69	44	9.12	1310	7.56	440	6.87	158	7.14	251	7.96	710	6.25	38	6.19	29
17	6.08	17	6.35	53	6.37	40	7.31	239	6.71	47	9.00	1180	7.46	390	6.83	148	7.04	211	8.21	910	6.23	35	6.10	18
18	6.14	20	6.29	44	6.25	24	7.21	199	6.77	55	10.25	2720	7.31	320	6.77	133	6.98	189	9.71	2660	6.37	56	6.12	20
19	6.23	26	6.29	44	6.23	22	7.04	125	6.69	44	8.96	1140	7.23	287	6.85	153	7.02	203	9.42	2270	6.31	47	6.23	35
20	6.31	33	6.39	59	6.79	113	7.02	120	6.79	59	8.96	1140	7.31	320	6.87	158	6.87	158	8.92	1660	6.25	38	6.25	38
21	6.46	49	6.67	109	6.81	117	6.87	89	6.73	49	9.29	1630	7.48	400	6.83	148	6.85	153	8.29	980	6.17	26	6.19	29
22	6.46	49	6.37	56	6.75	105	6.89	93	6.75	53	10.25	3020	7.44	380	6.81	143	6.79	138	7.96	710	6.27	41	6.12	20
23	6.42	44	6.31	47	6.67	89	6.87	89	6.77	55	11.04	4600	7.39	356	6.73	123	6.87	158	7.54	430	6.23	35	6.06	15
24	6.39	41	6.35	53	6.54	66	6.85	85	6.75	53	12.83	11840	7.27	303	6.83	148	7.46	390	7.46	390	6.29	44	6.10	18
25	6.37	39	6.31	47	6.75	105	6.87	89	6.81	62	11.67	7380	7.23	287	8.37	1050	7.25	295	7.37	347	6.23	35	6.06	15
26	6.42	44	6.35	53	6.75	105	6.71	62	6.85	68	11.12	5350	7.21	279	8.60	1290	7.58	450	7.29	311	6.19	29	6.10	18
27	6.42	44	6.54	83	6.92	145	6.71	62	6.81	62	10.39	3710	7.19	271	8.64	1330	8.29	980	7.12	243	6.29	44	6.12	20
28	6.39	41	6.42	63	6.85	127	6.62	48	6.87	70	10.04	3150	7.23	287	8.56	1250	8.75	1460	6.89	163	6.27	41	6.19	29
29	6.37	39	6.56	87	6.87	133	6.75	68	.....	.....	9.27	2080	7.19	271	8.52	1200	8.87	1600	6.83	148	6.19	29	6.10	18
30	6.23	26	7.21	279	6.42	33	6.83	81	.....	.....	9.08	1860	7.17	263	8.33	1020	8.50	1180	6.54	83	6.33	50	6.23	35
31	6.19	23	.....	.....	6.46	39	6.83	81	.....	.....	8.54	1220	.....	.....	7.96	710	.....	.....	6.58	91	6.33	50	.....	.....

Monthly Discharge of Thames River (North Branch) near Fanshawe for 1916-7

Drainage Area, 585 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916).	58	14	32	.10	.02	.05	.06
November "	279	18	60	.48	.03	.10	.11
December "	279	24	136	.48	.04	.23	.27
January (1917).	1,210	48	335	2.07	.08	.57	.66
February	135	44	76	.23	.08	.13	.14
March	11,840	91	2,116	20.24	.16	3.62	4.17
April	3,300	263	978	5.64	.45	1.67	1.86
May	1.330	123	444	2.27	.21	.76	.88
June	1,600	138	472	2.74	.24	.81	.90
July	3,150	83	1,102	5.38	.14	1.88	2.17
August	87	26	46	.15	.04	.08	.09
September	83	15	36	.14	.03	.06	.07
The year	11,840	14	491	20.24	.02	.84	11.39

Thames River (South Branch) near Ealing

Location—At the highway bridge known as Vauxhall Bridge between lots 10 and 11, concession B, between Townships of London and Westminster, County of Middlesex.

Records Available—Daily gauge heights and discharge measurements from May 11, 1915.

Drainage Area—515 square miles.

Gauge—Vertical staff 0 to 12 feet on downstream side of first right pier. Elevation of zero on gauge is 4.00, referred to B.M., elevation 30.00.

Channel and Control—The channel is straight above and below for 800 feet. The banks and control are shifting under high-water conditions.

Discharge Measurements—Made from the bridge. During the extreme low water a wading section is used.

Winter Flow—The relation of gauge height to discharge is affected by ice during the winter months.

Accuracy—The rating curve is fairly well defined up to gauge height 11.00 feet.

Observer—F. W. Leathorn, London.

Discharge Measurements of Thames River (South Branch) near Ealing in 1917

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Jan. 9....	Yeates, W.....	101	248	1.67	7.58	414(a)	.....
Feb. 11....	"	95	173	.50	7.04	86(b)	.....
Mar. 9....	Roberts, E.....	110	264	1.89	8.33	500(b)	.....
" 13....	"	193	1,267	2.29	12.33	2,908(c)	.....
" 25....	Yeates, W.....	193	1,138	3.22	11.60	3,669(d)	.....
" 26....	"	193	848	2.62	10.09	2,222(d)	.....
" 27....	"	193	752	2.46	9.58	1,851(d)	.....
" 28....	"	189	733	2.34	9.50	1,717(d)	.....
May 16....	"	149	222	1.06	6.56	236	.....
June 19....	Roberts, E.....	161	347	1.63	7.39	565	.....
July 4....	Yeates, W.....	181	499	2.02	8.22	1,009	.....
Aug. 16....	Roberts, E.....	147	189	.88	6.31	167	.....
Sept. 30....	Yeates, W.....	144	183	.78	6.25	142	.....
Oct. 24....	"	153	237	1.23	6.69	294	.....

(a) Ice measurement.
(b) Ice measurement taken 400 feet above gauge.
(c) Affected by ice jam. Surface velocities recorded and co-efficient applied.
(d) Mostly all surface velocities recorded and co-efficient applied.

Daily Gauge Height and Discharge of Thames River (South Branch) near Ealing for 1916-7

Drainage Area, 515 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	6.12	105	6.10	95	6.58	239	6.83	179	7.04	137	8.19	456	9.33	1610	7.29	496	7.94	790	8.44	1060	6.39	182	6.12	101
2	6.00	80	6.04	80	6.54	227	6.79	167	7.00	125	8.17	448	10.96	3010	8.21	935	8.00	820	9.00	1390	6.37	176	6.21	128
3	6.00	80	6.10	95	6.25	140	6.83	179	7.00	125	8.00	380	11.37	3460	8.00	820	7.64	645	8.69	1200	6.37	176	6.23	134
4	5.96	72	6.04	80	6.25	140	6.83	179	7.00	125	8.00	380	10.42	2500	7.58	615	7.35	520	8.14	895	6.29	152	6.25	140
5	5.96	72	6.04	80	6.23	134	7.10	260	7.04	107	8.00	380	10.42	2500	7.58	615	7.35	520	8.14	895	6.29	152	6.25	140
6	5.96	72	5.87	38	6.48	209	7.75	500	7.04	107	7.92	352	9.02	1400	7.33	510	7.25	480	7.50	580	6.17	116	6.17	116
7	5.96	72	6.04	80	6.27	146	8.00	605	7.00	95	8.00	380	10.54	2610	7.33	510	8.37	1020	7.08	412	6.25	140	6.25	140
8	6.00	80	6.14	107	6.23	134	7.87	550	7.00	95	8.00	380	10.92	2970	7.25	480	11.46	3560	7.00	380	6.29	152	6.39	182
9	5.83	50	6.10	95	6.27	116	7.62	428	7.00	95	8.04	396	10.39	2470	7.08	412	10.52	2590	7.83	735	6.33	164	6.42	191
10	6.04	88	6.23	134	6.29	122	7.67	448	7.00	95	8.31	505	8.79	1260	7.12	428	9.14	1480	8.77	1250	6.29	152	6.29	152
11	5.92	64	6.19	122	6.23	104	7.54	396	7.04	80	9.14	790	7.79	715	7.04	396	7.85	745	12.27	4560	6.50	215	6.25	140
12	5.92	64	6.21	128	6.37	146	7.37	334	6.87	38	10.79	1650	7.60	625	6.81	314	7.54	600	10.08	2190	6.37	176	6.17	116
13	6.00	80	6.04	80	6.83	286	7.29	307	7.00	70	12.04	2610	7.46	565	6.71	279	7.25	480	9.08	1440	6.29	152	6.17	116
14	6.25	137	6.10	95	6.54	197	7.12	251	7.08	90	12.08	2640	7.21	464	6.62	251	8.27	970	8.46	1070	6.23	134	6.19	122
15	6.25	137	6.19	122	6.58	179	7.08	209	7.00	70	11.33	1990	7.21	464	6.52	221	8.37	1020	8.39	1030	6.48	209	6.14	107
16	6.19	122	6.17	116	6.58	179	7.00	185	6.96	60	10.62	1470	7.14	436	6.50	215	7.96	800	8.21	935	6.33	164	6.17	116
17	6.23	132	6.12	101	6.50	155	6.92	161	7.04	80	10.75	1560	7.06	404	6.50	215	7.62	635	8.79	1260	6.33	164	6.08	90
18	6.08	96	6.14	107	6.50	155	6.96	173	7.04	80	11.17	1860	7.04	396	6.50	215	7.37	530	10.87	2920	6.23	134	6.06	85
19	6.23	132	6.04	80	6.50	155	7.00	185	7.04	80	10.56	1430	7.08	412	6.50	215	7.29	496	11.17	3240	6.17	116	6.14	107
20	6.50	210	6.00	70	6.50	155	7.08	209	7.08	90	9.98	1080	7.08	412	7.54	600	7.08	412	9.50	1730	6.17	116	6.08	90
21	6.69	267	6.12	101	6.50	125	7.12	221	7.12	101	10.48	1720	7.50	580	7.58	615	7.14	436	8.71	1210	6.58	239	6.12	101
22	6.54	222	6.08	90	6.50	125	7.08	179	7.17	116	10.37	2020	7.62	635	7.58	615	6.96	366	8.17	915	6.29	152	6.12	101
23	6.35	167	6.08	90	6.50	125	7.08	179	7.17	116	10.67	2540	7.52	590	9.83	1990	6.79	307	7.67	655	6.31	158	5.96	60
24	6.39	177	6.27	146	6.50	125	7.00	155	7.17	116	12.42	4770	7.52	590	9.89	2040	6.94	359	7.33	510	6.46	203	6.00	70
25	6.31	157	6.17	116	6.50	125	7.00	155	7.25	140	11.67	3800	7.29	495	10.37	2450	7.00	380	7.04	396	6.50	215	6.06	85
26	6.21	127	6.33	164	6.50	125	7.00	155	7.37	176	10.58	2640	7.42	550	9.25	1550	8.04	840	6.96	366	6.33	164	6.08	90
27	6.12	105	6.29	152	6.54	107	7.00	155	7.71	279	9.58	1800	7.44	555	8.54	1120	10.58	2640	6.92	352	6.17	116	6.08	90
28	6.10	100	6.25	140	6.77	176	7.12	191	8.00	380	9.46	1700	7.25	480	8.02	830	9.75	1920	6.79	307	6.25	140	6.12	101
29	6.12	105	6.42	191	6.83	194	7.08	149	....	.....	9.21	1530	7.06	404	7.96	800	9.17	1500	6.58	239	6.23	134	6.19	122
30	6.00	80	6.54	227	6.83	194	7.08	149	....	.....	8.71	1210	7.12	428	7.77	705	8.85	1295	6.56	233	6.27	146	6.17	116
31	6.10	100	....	.....	6.81	188	7.08	149	....	.....	8.29	980	.....	.....	7.50	580	....	....	6.50	215	6.33	164	.....	....

Monthly Discharge of Thames River (South Branch) near Ealing for 1916-7

Drainage Area, 515 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	267	64	115	.52	.12	.22	.25
November "	227	38	111	.44	.07	.22	.25
December "	239	104	159	.46	.20	.31	.36
January (1917)	605	155	250	1.17	.30	.49	.56
February	380	38	116	.74	.07	.23	.24
March	4,770	352	1,482	9.26	.68	2.88	3.32
April	3,460	596	1,080	6.72	.77	2.10	2.34
May	2,450	215	707	4.76	.42	1.37	1.58
June	3,560	307	988	6.91	.60	1.92	2.14
July	4,560	215	1,196	8.85	.42	2.32	2.67
August	321	116	166	.62	.23	.32	.37
September	191	60	115	.37	.12	.22	.25
The year	4,770	38	543	9.26	.07*	1.05	14.31

Regular Stations

SOUTH-WESTERN ONTARIO DISTRICT

Grand River and Tributaries

River	Location	Drainage Area Sq. Miles	Township	County
Grand	at Belwood	280	Garafraxa	Wellington
"	at Brantford	2,000	Brantford	Brant
"	near Conestogo	550	Woolwich	Waterloo
"	at Galt	1,360	North Dumfries	"
"	at Glen Morris	1,390	South Dumfries	Brant
"	at York	2,280	Oneida	Haldimand
Nith	near Canning	430	Blenheim	Oxford
Speed	near Guelph	77	Guelph	Wellington
"	at Hespeler,	250	Waterloo	Waterloo

Grand River at Belwood

Location—At the bridge in the Village of Belwood, on the 7th concession, Township of Garafraxa, County of Wellington.

Records Available—From August 31, 1913.

Drainage Area—280 square miles.

Gauge—Vertical steel staff 0 to 12 feet on right abutment. Elevation of zero on gauge is 1366.00, which has remained unchanged since established.

Channel and Control—The channel is straight for about 400 feet above and 600 feet below gauging section. The channel bed at the bridge is solid rock, and permanent at all stages. At the permanent low water section, however, the channel is shifting under high water conditions.

Winter Flow—During the winter months the relation of gauge height to discharge is greatly affected by ice, and readings are taken to determine the winter discharge.

Accuracy—The river stage at this section is not affected by any power plants above or below. The rating curve is well defined, and estimates are considered good.

Observer—H. Hutchinson, Belwood P.O.

Discharge Measurements of Grand River at Belwood in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 6....	Roberts, E.	63	14	.38	1366.83	5	.....
Dec. 20....	Yeates, W.....	72	28	1.12	1367.62	31 (a)	.....
1917							
Jan. 11....	"	76	26	1.25	1367.69	33 (a)	.....
Feb. 6....	"	70	18	.53	1367.56	9 (a)	.....
Mar. 20....	Roberts, E.....	120	79	1.82	1369.08	145 (a)	.....
Apr. 4....	Yeates, W.....	110	671	3.03	1369.92	2,034	.....
" 4....	"	110	665	3.02	1369.86	2,008	.....
May 12....	Roberts, E.....	77	48	1.74	1367.31	84	.....
Sept. 26....	Yeates, W.....	61	11	.45	1366.81	5	.....
Oct. 19....	"	65	42	1.17	1367.29	75	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of Grand River at Belwood for 1916-7

Drainage Area 280 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1366.85	6	1366.98	18	1367.25	68	1367.46	6	1367.75	28	1368.25	34	1370.79	3380	1367.62	187	1367.37	101	1369.35	1330	1367.00	20	1366.89	9
2	1366.83	5	1366.94	14	1367.21	58	1367.50	10	1367.67	17	1368.25	30	1371.08	3970	1367.79	247	1367.31	83	1369.44	1420	1367.04	26	1366.92	12
3	1366.83	5	1366.92	12	1367.17	49	1367.50	10	1367.67	17	1368.08	8	1370.42	2820	1367.77	240	1367.27	73	1368.75	795	1367.01	22	1366.89	9
4	1366.83	5	1366.94	14	1367.17	49	1367.50	10	1367.67	17	1368.08	6	1369.85	1910	1367.67	205	1367.25	68	1368.27	460	1366.99	19	1366.89	9
5	1366.83	5	1366.98	18	1367.21	58	1367.67	31	1367.58	8	1368.08	4	1369.48	1460	1367.69	212	1367.21	58	1367.87	275	1366.95	15	1366.87	7
6	1366.83	5	1366.92	12	1367.52	152	1367.67	31	1367.54	4	1368.08	2	1368.92	930	1367.85	268	1367.21	58	1367.62	187	1366.93	13	1366.85	5
7	1366.83	5	1366.96	16	1367.39	107	1367.67	31	1367.67	15	1368.12	4	1368.54	635	1367.71	219	1367.27	73	1367.45	128	1366.92	12	1366.83	3
8	1366.83	5	1366.92	12	1367.29	78	1367.67	31	1367.67	13	1368.17	7	1368.50	605	1367.60	180	1367.33	89	1367.56	166	1367.33	89	1366.83	3
9	1366.89	7	1366.96	16	1367.39	107	1367.67	31	1367.67	11	1368.25	13	1368.42	550	1367.50	145	1367.38	104	1367.73	226	1367.17	49	1366.83	3
10	1366.92	8	1366.98	18	1368.67	730	1367.58	18	1367.75	17	1368.25	11	1368.42	550	1367.46	131	1367.32	86	1369.69	1700	1367.06	29	1366.83	3
11	1366.87	6	1367.00	20	1368.37	458	1367.58	18	1367.75	15	1368.33	17	1368.17	405	1367.35	95	1367.23	63	1369.71	1730	1367.00	20	1366.83	3
12	1366.92	8	1367.00	20	1368.29	415	1367.58	18	1367.75	13	1368.62	65	1369.25	1225	1367.29	78	1367.14	43	1369.23	1210	1366.97	17	1366.83	3
13	1366.96	9	1367.00	20	1367.83	190	1367.58	18	1367.75	11	1368.67	73	1368.92	930	1367.23	63	1367.08	32	1368.81	845	1366.92	12	1366.83	3
14	1367.00	11	1367.00	20	1367.92	222	1367.58	18	1367.75	9	1368.67	67	1368.92	930	1367.19	53	1367.48	138	1369.85	1910	1366.92	12	1366.83	3
15	1366.96	9	1367.00	20	1367.79	142	1367.62	23	1367.75	7	1368.67	63	1368.12	380	1367.14	43	1367.44	124	1369.52	1510	1366.92	12	1366.83	3
16	1366.96	9	1366.92	12	1367.58	75	1367.67	31	1367.75	5	1368.75	47	1367.87	275	1367.12	39	1367.35	95	1368.92	930	1366.92	12	1366.83	3
17	1366.94	9	1366.92	12	1367.46	29	1367.67	31	1367.75	3	1369.00	145	1367.79	245	1367.08	32	1367.27	73	1368.40	535	1366.89	9	1366.83	3
18	1366.92	8	1366.92	12	1367.37	17	1367.50	10	1367.92	18	1369.33	250	1367.92	295	1367.06	29	1367.22	60	1368.12	380	1366.89	9	1366.83	3
19	1367.02	12	1366.92	12	1367.25	5	1367.58	18	1367.92	16	1369.08	152	1368.12	380	1367.04	26	1367.29	78	1368.08	361	1366.88	8	1366.83	3
20	1367.12	18	1366.92	12	1367.58	32	1367.58	18	1367.92	14	1369.00	110	1368.54	635	1367.19	53	1367.34	92	1367.98	317	1366.87	7	1366.83	3
21	1366.12	18	1366.92	12	1367.25	0	1367.58	18	1367.92	12	1368.87	169	1369.25	1225	1367.23	63	1367.27	73	1367.74	229	1366.87	7	1366.83	3
22	1366.12	18	1366.92	12	1367.21	0	1367.58	18	1367.92	10	1369.27	458	1368.79	825	1367.37	101	1367.17	49	1367.56	166	1366.85	5	1366.83	3
23	1366.08	14	1366.94	14	1367.25	0	1367.54	14	1367.92	8	1370.33	1630	1368.33	493	1368.69	745	1367.08	32	1367.44	124	1366.92	12	1366.81	1
24	1366.96	9	1367.00	20	1367.37	7	1367.50	10	1368.00	14	1371.62	4280	1368.04	343	1368.58	660	1367.62	187	1367.32	86	1366.98	18	1366.81	1
25	1366.94	9	1367.00	20	1367.27	0	1367.50	10	1367.92	4	1372.70	7680	1367.92	293	1368.64	705	1367.69	212	1367.24	65	1367.00	20	1366.81	1
26	1366.92	8	1367.00	20	1367.35	0	1367.58	18	1368.21	37	1372.67	8230	1367.67	205	1368.19	415	1367.94	301	1367.18	51	1366.98	18	1366.81	1
27	1366.92	8	1367.00	20	1367.42	12	1367.50	10	1368.25	41	1372.83	8760	1368.04	343	1367.81	254	1367.96	309	1367.13	41	1367.00	20	1366.81	1
28	1366.92	8	1367.00	20	1367.37	7	1367.50	10	1368.25	37	1370.67	3150	1367.75	233	1367.62	187	1367.64	194	1367.07	31	1366.96	16	1366.83	3
29	1366.92	8	1367.08	32	1367.42	12	1367.58	18	.....	....	1369.75	1780	1367.67	205	1367.48	138	1367.81	254	1367.03	25	1366.92	12	1366.83	3
30	1366.92	8	1367.25	68	1367.42	12	1367.79	34	.....	....	1369.33	1300	1367.58	173	1367.35	95	1367.85	268	1367.00	20	1366.92	12	1366.83	3
31	1366.94	9	.....	....	1367.37	7	1367.75	28	.....	....	1370.17	2330	.....	....	1367 27	73	.....	....	1367.00	20	1366.92	12	.....	...

Monthly Discharge of Grand River at Belwood for 1916-7

Drainage Area, 280 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	18	5	9	.06	.02	.03	.03
November "	68	12	18	.24	.04	.06	.07
December "	730	0	100	2.61	.00	.36	.42
January (1917)	34	6	19	.12	.02	.07	.08
February	41	3	15	.15	.01	.05	.05
March	8,760	2	1,319	31.29	.007	4.71	5.43
April	3,979	173	895	14.18	.62	3.20	3.57
May	745	26	193	2.66	.09	.69	.80
June	309	32	116	1.10	.11	.41	.46
July	1,910	20	557	6.82	.07	1.99	2.29
August	89	5	18	.32	.02	.06	.07
September	12	1	4	.04	.004	.01	.01
The year	8,760	0	274	31.29	.00	.98	13.28

Grand River at Brantford

Location—At the Toronto-Hamilton-Buffalo Railway bridge in the City of Brantford, County of Brant.

Records Available—Discharge measurements from August, 1912. Daily gauge heights from July 8, 1913.

Drainage Area—2,000 square miles.

Gauge—Vertical steel staff, 0 to 12 feet on left abutment. Elevation of zero on gauge is 643.00, which has remained unchanged since established.

Channel and Control—The flow is confined between the abutments of the bridge at all stages. The bed and left bank is shifting under high water conditions.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice, and measurements are made to determine the winter flow.

Regulation—The Western Counties Electric Company have a dam 1,000 feet above this section that causes fluctuations that are noticeable in the river stage. Their plant is running at its full capacity. The observed mean gauge height does not give the correct mean daily stage.

Diversions—The Western Counties Electric Company use about 50 second feet for power purposes at times.

Accuracy—With the exception of a slight angle at section these records can be classified as good.

Observer—John Anguish, Brantford.

Discharge Measurements of Grand River at Brantford in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Dec. 10....	Yeates, W	248	844	.70	644.96	594(a)	.....
1917							
Jan. 2....	"	248	868	.84	645.08	732(a)	.....
Feb. 1....	Roberts, E	275	838	.96	645.31	807(a)	.....
Mar. 2....	"	278	949	1.15	645.73	1,095(b)	.....
" 26....	"	373	4,704	6.76	654.90	31,778(c)	.....
" 27....	"	373	4,704	7.14	654.92	33,590(c)	.....
" 29....	Yeates, W, ...	373	2,801	3.96	649.83	11,090(c)	.....
" 29....	"	373	2,764	3.94	649.67	10,885(c)	.....
" 30....	"	373	2,354	3.30	648.58	7,779(c)	.....
April 2....	Roberts, E, ...	373	3,473	4.86	651.58	16,885(c)	.....
" 3....	"	373	3,697	5.01	652.17	18,526(c)	.....
" 4....	"	373	2,727	3.89	649.62	10,596(c)	.....
" 4....	"	373	2,624	3.75	649.34	9,844(c)	.....
" 23....	"	366	1,608	1.90	646.62	3,051	.....
May 19....	Yeates, W, ...	323	1,001	.86	644.94	857	.....
July 11....	"	373	3,323	4.42	651.21	14,682	.....
" 16....	"	373	2,055	2.75	647.81	5,656	.....
Aug. 13....	Roberts, E.	321	948	.75	644.76	709	.....
Sept. 24....	Yeates, W.	218	744	.27	643.96	199	.....
" 27....	"	215	709	.27	643.89	194	.....
Oct. 6....	"	282	884	.58	644.52	514	.....

(a) Ice measurement.
(b) Ice measurements. Some estimated velocities.
(c) Surface velocities recorded and co-efficient applied.

Daily Gauge Height and Discharge of Grand River at Brantford for 1916-7

Drainage Area, 2,000 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	644.52	465	644.67	573	645.06	940	644.96	610	645.04	545	645.58	960	649.21	9498	645.46	1356	645.52	1424	647.08	4108	644.60	510	644.44	388
2	644.56	495	644.68	582	645.04	920	645.12	755	645.17	666	645.60	980	650.87	14260	645.64	1572	645.64	1572	653.17	22625	644.58	494	644.42	374
3	644.37	359	644.69	591	644.98	860	644.98	625	645.06	565	645.52	900	651.71	16893	645.87	1895	645.50	1400	649.87	11346	644.85	735	644.44	388
4	644.39	373	644.70	600	644.92	800	645.00	645	644.92	446	645.56	940	649.54	10422	646.04	2154	645.42	1312	647.48	4966	644.81	699	644.48	416
5	644.44	408	644.71	609	644.94	820	645.14	770	645.31	790	645.56	940	648.42	7322	645.71	1664	645.27	1150	646.56	3044	644.64	546	644.44	388
6	644.44	408	644.72	618	644.94	820	645.21	840	645.19	680	645.50	880	648.54	7638	645.67	1611	645.27	1150	646.02	2122	644.56	478	644.42	374
7	644.37	359	644.73	627	644.94	820	645.31	940	645.25	735	645.50	880	648.62	7854	645.96	2030	646.31	2597	645.56	1472	644.67	573	644.39	354
8	644.29	304	644.74	636	645.12	1000	645.42	1050	645.12	620	645.62	1000	647.79	5705	645.83	1835	645.89	1925	645.79	1776	644.54	462	644.50	430
9	644.25	278	644.75	645	644.96	840	645.50	1130	645.19	680	645.58	960	647.21	4381	645.64	1572	645.44	1334	647.06	4066	644.56	478	644.44	388
10	644.31	317	644.75	645	644.96	655	645.48	1110	644.98	494	645.50	880	646.67	3260	645.48	1378	645.46	1356	650.23	12357	645.23	1110	644.42	374
11	644.33	331	644.58	494	645.02	710	645.44	1070	644.87	409	645.71	1090	646.23	2461	645.39	1279	645.39	1279	650.98	14590	645.00	880	644.25	270
12	644.33	331	644.62	528	645.10	780	645.44	1070	645.17	665	646.56	2190	646.06	2186	645.27	1150	645.14	1020	649.50	10310	644.83	717	644.25	270
13	644.42	394	644.75	645	645.02	710	645.35	930	645.12	620	646.62	2280	646.58	3082	645.19	1070	645.04	920	648.69	8043	644.64	546	644.21	246
14	644.44	408	644.67	575	644.73	454	645.17	755	645.12	620	647.54	4020	646.31	2597	645.04	920	645.23	1110	648.73	8154	644.62	528	644.21	246
15	644.44	408	644.62	530	644.79	500	645.31	890	645.10	600	647.52	3980	645.98	2060	644.92	800	645.75	1720	649.29	9722	644.54	462	644.17	225
16	644.50	450	644.52	445	644.89	590	645.29	870	645.04	545	647.12	3160	645.79	1776	644.85	735	645.85	1865	647.87	5905	644.60	510	644.33	318
17	644.39	373	644.69	590	644.73	454	645.37	950	645.02	530	647.04	3010	645.54	1448	644.83	717	645.58	1496	646.89	3709	644.29	294	644.21	246
18	644.44	408	644.42	374	645.04	725	645.21	790	645.04	545	647.75	4460	645.44	1334	644.73	627	645.29	1170	646.79	3500	644.33	318	644.14	210
19	644.56	495	644.62	530	644.98	670	645.33	910	645.19	680	648.14	5340	645.44	1334	644.73	627	645.06	940	646.54	3006	644.37	342	644.21	246
20	644.79	670	644.62	530	644.94	635	645.27	850	645.27	755	647.48	3900	645.73	1692	645.04	920	645.98	2060	646.21	2427	644.29	294	644.27	282
21	645.02	885	644.58	494	644.87	575	645.08	670	645.25	735	647.29	3500	646.21	2427	645.44	1334	645.56	1472	645.89	1925	644.17	225	644.25	270
22	645.04	905	644.54	462	644.81	520	645.29	820	645.19	680	647.29	3500	646.79	3500	645.39	1279	645.23	1110	645.69	1637	644.21	246	644.14	210
23	644.96	825	644.56	478	644.69	388	645.25	780	645.12	620	647.83	5080	646.58	3082	645.50	1400	645.00	880	645.60	1520	644.23	258	644.14	210
24	644.85	720	644.64	545	644.60	330	645.21	745	644.98	494	652.50	19770	646.33	2631	647.83	5805	645.12	1000	645.29	1170	644.48	416	644.12	200
25	644.75	640	644.67	575	644.79	462	645.17	710	645.00	510	653.54	24370	646.06	2186	648.02	6282	645.25	1130	645.14	1020	644.44	388	644.08	182
26	644.75	640	644.46	402	644.87	530	645.02	575	645.42	900	654.46	29562	645.83	1835	647.54	5102	645.71	1664	645.25	1130	644.58	494	644.17	225
27	644.67	560	644.69	590	645.00	645	645.02	575	645.50	980	654.33	28770	645.87	1895	646.54	3006	647.37	4724	645.00	880	644.48	416	644.17	225
28	644.72	615	644.83	715	645.00	645	644.98	535	645.46	940	652.83	21129	645.89	1925	646.12	2282	647.56	5148	644.87	753	644.52	446	644.23	258
29	644.56	495	644.81	700	644.92	575	645.00	555	.....	.....	649.71	16898	645.64	1572	645.77	1748	646.56	3044	644.83	717	644.50	430	644.19	235
30	644.62	540	644.98	860	645.00	645	645.04	590	.....	.....	648.54	7638	645.54	1448	645.62	1546	647.35	4680	644.77	663	644.54	462	644.21	246
31	644.67	580	.....	.....	644.87	530	645.10	645	.....	.....	647.94	6080	.....	.....	645.35	1235	.....	.....	644.58	494	644.37	342	.....	.....

Monthly Discharge of Grand River at Brantford for 1916-7

Drainage Area, 2,000 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October ..(1916).	905	278	498	.46	.14	.25	.29
November "	860	374	573	.43	.19	.29	.32
December "	1,000	330	663	.50	.16	.33	.38
January (1917).	1,130	535	799	.56	.27	.40	.46
February	980	409	645	.49	.20	.32	.33
March	29,562	880	6,550	14.78	.44	3.27	3.77
April.....	16,893	1,334	4,324	8.45	.67	2.16	2.41
May.....	6,282	627	1,835	3.64	.31	.92	1.06
June	5,148	880	1,788	2.57	.44	.89	.99
July	22,625	494	4,820	11.31	.25	2.41	2.78
August	1,110	225	487	.56	.11	.24	.28
September	430	182	290	.22	.09	.15	.17
The year.....	29,562	182	1,951	14.78	.09	.97	13.25

Grand River near Conestogo

Location—At the highway bridge ¼ mile below the Village of Conestogo, Township of Woolwich, County of Waterloo.

Records Available—From July 16, 1913.

Drainage Area—550 square miles.

Gauge—Vertical steel staff 0 to 12 feet on the centre pier of bridge. Elevation of zero is 1017.00 feet.

Channel and Control—The channel is straight for about 300 feet above and below the gauging section. The banks are low and liable to overflow. The bed is composed of gravel, and all the water is confined between the abutments of the bridge, except at a very serious flood. In flood stages the banks and bed are liable to shift slightly.

Discharge Measurements—Made from the bridge during high water, and at a permanent low water section located 600 feet upstream during the low water period.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice during the winter season, and measurements are made to determine the winter flow.

Accuracy—The slight shifting of the channel has little affect. The rating curve is well defined, and records are good.

Observer—Geo. Schinbein, Conestogo.

Discharge Measurements of Grand River near Conestogo in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 6....	Roberts, E.	118	45	.60	1017.77	27	.....
Dec. 20....	Yeates, W.....	136	92	.90	1018.50	83 (a)	.....
1917							
Jan. 11....	"	133	69	1.15	1018.87	79	.....
Feb. 7....	"	140	60	.73	1018.79	44	.....
Mar. 19....	Roberts, E.....	150	320	1.97	1020.67	629	.....
May 12....	"	137	134	1.51	1018.54	202	.....
" 24....	Yeates, W.....	233	588	2.58	1020.31	1,517	.....
Sept. 29....	"	120	57	.47	1017.73	27	.....
Oct. 26....	"	135	88	1.03	1018.25	91	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of Grand River near Conestogo for 1916-7

Drainage Area, 550 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1017.89	42	1017.94	44	1018.46	148	1018.58	56	1018.89	59	1018.92	37	1022.79	4505	1018.89	306	1018.79	266	1023.04	4894	1018.14	68	1018.12	64
2	1017.85	37	1017.94	44	1018.37	121	1018.60	56	1018.96	72	1019.29	88	1023.37	5422	1019.12	422	1018.73	242	1022.50	4090	1018.64	206	1018.08	58
3	1017.89	42	1017.83	33	1018.37	121	1018.71	70	1019.04	88	1019.44	127	1023.00	4830	1019.04	380	1018.60	190	1020.67	1817	1018.33	109	1018.17	74
4	1017.79	30	1017.96	46	1018.31	103	1018.67	59	1018.69	39	1019.42	106	1021.06	2246	1019.06	390	1018.52	166	1019.89	1021	1018.21	82	1018.21	82
5	1017.81	32	1017.89	39	1018.27	94	1018.77	74	1018.83	53	1019.31	82	1020.89	2059	1019.10	410	1018.46	148	1019.33	561	1018.10	60	1018.08	58
6	1017.79	30	1017.92	42	1018.44	142	1018.89	94	1018.75	45	1019.33	86	1020.67	1817	1019.27	519	1018.50	160	1019.00	360	1018.14	68	1018.00	50
7	1017.81	32	1017.96	46	1018.56	178	1018.85	82	1018.89	49	1019.35	90	1020.42	1542	1019.27	519	1018.54	172	1018.83	282	1018.12	64	1018.02	52
8	1017.71	22	1017.94	44	1018.39	127	1018.89	86	1018.87	47	1019.37	94	1020.12	1240	1019.04	380	1018.56	178	1019.12	422	1018.12	64	1017.96	46
9	1017.81	32	1017.92	42	1018.42	136	1018.89	82	1018.83	43	1019.33	76	1019.87	1063	1018.83	282	1018.60	190	1019.60	760	1019.25	505	1018.02	52
10	1017.67	18	1017.96	46	1018.42	106	1018.81	62	1018.77	37	1019.27	64	1019.46	652	1018.77	258	1018.54	172	1022.92	4702	1018.58	184	1017.94	44
11	1017.71	22	1018.00	50	1018.48	124	1018.77	57	1018.71	31	1019.48	109	1019.50	680	1018.64	206	1018.50	160	1021.73	3039	1018.39	127	1018.02	52
12	1017.71	22	1017.87	37	1018.50	130	1018.87	74	1018.75	35	1019.56	133	1020.25	1370	1018.52	166	1018.37	121	1021.48	2746	1018.17	74	1017.92	42
13	1017.87	39	1017.94	44	1018.44	112	1018.85	70	1018.75	30	1019.75	190	1020.23	1350	1018.39	127	1018.35	115	1020.75	1905	1018.14	68	1017.89	39
14	1017.94	49	1017.87	37	1018.48	124	1018.75	55	1018.75	30	1019.83	202	1019.64	796	1018.35	115	1018.79	266	1021.98	3384	1018.14	68	1018.08	58
15	1017.78	30	1017.89	39	1018.54	112	1018.81	62	1018.75	30	1019.89	226	1019.25	505	1018.33	109	1018.71	234	1021.31	2542	1018.08	58	1017.98	48
16	1017.96	51	1017.81	31	1018.60	130	1018.83	66	1018.75	30	1019.96	254	1019.23	491	1018.25	90	1018.54	172	1020.50	1630	1018.00	50	1017.85	35
17	1017.79	30	1017.94	44	1018.48	96	1018.87	74	1018.75	30	1020.35	440	1019.08	400	1018.19	78	1018.59	127	1019.87	1003	1017.98	48	1017.77	27
18	1017.75	26	1017.96	46	1018.46	92	1018.71	51	1018.92	47	1020.39	464	1019.02	370	1018.23	86	1013.56	178	1019.54	712	1018.04	54	1017.81	31
19	1017.79	30	1018.00	50	1018.48	96	1018.68	48	1018.79	29	1020.50	505	1019.25	505	1018.23	86	1018.54	172	1019.37	589	1017.94	44	1018.00	50
20	1018.29	119	1017.89	39	1018.44	68	1018.69	49	1018.79	29	1020.58	560	1019.75	895	1018.46	148	1018.50	160	1019.25	505	1018.02	52	1017.94	44
21	1018.33	130	1017.81	31	1018.46	72	1018.67	47	1018.79	29	1020.67	625	1020.39	1510	1018.44	142	1018.46	148	1019.06	390	1018.04	54	1017.92	22
22	1018.21	100	1017.75	25	1018.41	59	1018.73	53	1018.79	29	1021.25	1120	1020.21	1330	1018.64	206	1018.35	115	1018.83	282	1017.94	44	1017.75	25
23	1018.14	83	1017.94	44	1018.44	60	1018.79	59	1018.83	33	1022.96	3890	1019.83	967	1020.48	1608	1018.31	103	1018.69	226	1017.98	48	1017.73	23
24	1018.21	100	1017.98	48	1018.33	47	1018.85	70	1018.83	33	1025.10	8190	1019.48	666	1020.37	1490	1018.62	198	1018.56	178	1018.31	103	1017.75	23
25	1018.04	64	1018.29	98	1018.31	43	1018.62	42	1018.79	29	1024.10	6590	1019.17	452	1020.27	1390	1019.96	340	1018.50	160	1018.33	109	1017.87	37
26	1017.94	49	1018.21	82	1018.37	47	1018.73	43	1018.92	37	1026.20	9950	1019.21	477	1019.75	895	1019.42	624	1018.35	115	1018.19	78	1017.75	25
27	1017.87	39	1018.21	82	1018.39	47	1018.75	45	1018.92	37	1026.33	10158	1019.31	547	1019.25	505	1019.37	589	1018.29	98	1018.21	82	1017.89	39
28	1017.87	39	1018.31	103	1018.48	54	1018.69	39	1018.98	43	1022.92	4702	1019.23	491	1018.96	340	1019.25	505	1018.27	94	1018.23	86	1017.75	25
29	1017.85	37	1018.28	96	1018.54	58	1018.79	49	.....	....	1021.62	2916	1018.92	320	1018.81	274	1019.62	778	1018.12	64	1018.21	82	1017.87	37
30	1017.89	39	1018.39	127	1018.44	46	1019.02	84	.....	....	1021.17	2374	1018.87	298	1018.71	234	1019.67	823	1018.17	74	1018.14	68	1017.81	31
31	1017.94	49	.....	....	1018.67	74	1018.94	68	.....	....	1021.33	2566	.....	....	1018.60	190	.....	....	1018.21	82	1018.12	64	.....	...

Monthly Discharge of Grand River near Conestogo for 1916-7

Drainage Area, 550 Square Miles.

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	130	18	47	.24	.03	.08	.09
November "	127	25	53	.23	.05	.10	.11
December.. "	178	43	96	.32	.08	.17	.20
January. . (1917)	94	39	62	.17	.07	.11	.13
February	88	29	40	.16	.05	.07	.07
March.....	10,158	37	1,839	18.47	.07	3.34	3.85
April.....	5,422	298	1,325	9.87	.54	2.41	2.69
May.....	1,608	78	398	2.93	.14	.72	.83
June.	823	103	260	1.50	.19	.47	.52
July.....	4,894	64	1,250	8.90	.12	2.27	2.62
August.....	505	44	93	.92	.08	.17	.20
September.....	82	23	43	.15	.04	.08	.09
The year	10,158	18	463	18.47	.03	.84	11.43

Grand River at Galt

Location—At the Concession Street bridge, in the City of Galt, Township of North Dumfries, County of Waterloo.

Records Available—From July 21, 1913.

Drainage Area—1,360 square miles.

Gauge—Vertical steel staff 0 to 12 feet on first left pier of the bridge. Elevation of zero on gauge is 851.00, which has remained unchanged since established.

Channel and Control—The channel is straight for 1,000 feet above and below the section. The bed is solid rock formation. Residents each year encroach on the natural channel by building up the banks to protect their lots from washing away.

Discharge Measurements—Made from bridge for high stages, and at a permanent wading section 150 feet upstream during low stages.

Winter Flow—Ice slightly affects the relation of gauge height to discharge during the winter, and measurements are made to determine the winter flow.

Regulation—This section is subject to serious fluctuations in the river stage caused by the operation of the Galt dam situated ¼ mile above.

Accuracy—The rating curve is fairly well defined, and records are good.

Observer—Charles Parker, Galt.

Discharge Measurements of Grand River at Galt in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 12....	Roberts, E.	138	192	.99	852.96	189	.....
Dec. 12....	Yeates, W.....	184	650	.78	852.78	507	.....
1917							
Jan. 5....	"	180	564	.88	852.60	496 (a)	.....
Feb. 2....	"	175	477	.62	852.52	296 (a)	.....
Mar. 29....	"	214	1,694	4.06	857.96	6,868 (b)	.....
" 30....	"	199	1,338	2.92	856.29	3,915 (b)	.....
Apr. 3....	Roberts, E.	214	1,937	4.84	859.12	9,373 (b)	.....
" 26....	"	189	856	1.47	853.83	1.260	.....
July 3....	Yeates, W.....	204	1,396	3.04	856.58	4,247	.....
" 30....	Roberts, E.....	142	253	1.38	852.37	348	.....
Aug. 21....	Yeates, W	142	214	1.16	852.16	349	.....
Sept. 28....	"	142	197	1.09	852.08	215	.....
Oct. 13....	"	142	227	1.23	852.23	279	.....

(a) Ice measurements.
(b) Surface velocities recorded and co-efficient applied.

Daily Gauge Height and Discharge of Grand River at Galt for 1916-7

Drainage Area, 1,360 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	852.02	174	852.31	264	852.80	500	852.42	310	852.37	288	852.94	506	858.37	7514	853.48	916	853.29	794	855.19	2409	852.34	276	852.12	214
2	852.14	202	852.26	248	852.81	506	852.34	276	852.44	264	853.12	614	859.62	10824	853.71	1077	853.44	888	859.50	10450	852.44	320	852.25	245
3	852.07	184	852.28	254	852.56	380	852.24	242	852.52	296	853.21	668	859.62	10824	853.89	1203	853.29	794	856.71	4405	852.77	485	852.10	210
4	852.02	174	852.20	230	852.46	330	852.25	245	852.39	248	853.21	668	857.37	5496	853.69	1063	853.17	722	855.21	2431	852.42	310	852.26	248
5	852.08	186	852.04	198	852.61	405	852.52	360	852.67	370	853.35	752	856.33	3862	853.79	1133	853.06	656	854.37	1623	852.27	251	852.21	233
6	852.02	174	852.26	248	852.58	390	853.10	680	852.60	335	853.19	656	856.58	4212	853.79	1133	852.96	596	853.77	1119	852.35	280	852.17	224
7	851.98	166	852.21	233	852.77	485	852.75	475	852.48	280	853.08	590	856.12	3568	853.94	1242	853.14	704	853.42	874	852.31	264	852.14	218
8	851.92	154	852.21	233	852.85	530	853.04	644	852.54	305	852.96	518	855.42	2674	853.67	1049	853.21	746	853.87	1189	852.37	288	852.12	214
9	851.88	146	852.29	257	852.73	465	852.75	475	852.60	335	852.89	480	854.92	2120	853.48	916	853.19	734	855.89	3247	852.42	310	852.00	190
10	851.97	164	852.35	280	852.58	390	852.87	542	852.54	305	853.04	566	854.37	1623	853.39	854	853.12	692	858.71	8314	853.06	656	852.12	214
11	852.14	202	852.23	239	852.54	370	852.77	485	852.39	248	852.83	450	853.83	1161	853.31	806	853.04	644	858.46	7718	852.62	410	852.14	218
12	851.97	164	852.23	239	852.62	410	852.75	475	852.60	335	852.98	530	854.08	1362	853.00	620	852.96	596	857.12	5054	852.37	288	852.17	224
13	852.08	186	852.26	248	852.56	380	852.64	420	852.58	325	853.17	644	854.79	2001	852.79	495	852.87	542	856.46	4044	852.33	272	852.19	228
14	852.06	182	852.35	280	852.37	288	852.75	475	852.48	280	853.33	740	854.33	1587	852.71	455	853.29	794	857.37	5496	852.35	280	852.10	210
15	852.08	186	852.33	272	852.42	310	852.62	410	852.54	305	853.42	794	853.96	1258	852.62	410	853.87	1189	856.79	4525	852.28	254	852.00	190
16	852.10	190	852.27	251	852.48	340	852.71	455	852.48	280	853.42	794	853.69	1063	852.52	360	853.67	1049	855.71	3022	852.25	245	851.87	164
17	852.09	188	852.23	239	852.39	296	852.73	465	852.42	257	853.81	1056	853.42	874	852.52	360	853.08	668	854.58	1812	852.20	230	852.04	198
18	852.06	182	852.23	239	852.31	264	852.79	495	852.31	226	854.23	1380	853.33	818	852.46	330	853.04	644	854.33	1587	852.10	210	852.04	198
19	852.21	223	852.00	190	852.37	288	852.48	340	852.50	288	854.33	1470	853.48	916	852.43	315	853.12	692	854.04	1326	852.00	190	851.98	186
20	852.52	330	852.23	239	852.25	245	852.37	288	852.48	280	854.29	1434	853.83	1161	852.81	506	853.44	888	853.77	1119	852.10	210	852.06	202
21	852.75	460	852.08	206	852.17	224	852.39	296	852.56	315	854.21	1362	854.71	1929	853.04	644	853.10	680	853.58	986	852.08	206	852.07	204
22	852.75	460	852.08	206	852.10	210	852.37	288	852.50	385	854.77	1866	855.04	2244	853.08	668	852.83	518	853.31	806	852.12	214	852.04	198
23	852.59	365	852.23	239	852.04	198	852.42	310	852.54	305	855.89	3082	854.60	1830	854.25	1515	852.60	400	853.12	692	852.42	310	851.82	154
24	852.52	330	852.27	251	852.17	224	852.42	310	852.48	280	862.83	25390	854.21	1479	855.62	2914	852.85	530	852.94	584	852.39	296	852.06	202
25	852.51	325	852.06	202	852.18	226	852.48	340	852.37	242	861.12	16800	853.71	1077	855.75	3070	853.10	680	852.77	485	852.39	296	852.10	210
26	852.42	288	851.96	182	852.37	288	852.44	320	852.64	355	862.54	23950	853.96	1258	854.87	2073	853.96	1258	852.67	435	852.37	288	852.11	212
27	852.34	262	852.39	296	852.33	272	852.46	330	852.71	390	862.50	23750	853.92	1226	854.27	1533	855.29	2519	852.56	380	852.39	296	852.04	198
28	852.29	247	852.48	340	852.50	350	852.33	272	852.77	420	860.25	13035	853.79	1133	853.92	1226	854.56	1794	852.42	310	852.42	310	852.08	206
29	852.17	211	852.60	400	852.42	310	852.44	320	.....	.....	857.83	6380	853.62	1014	853.54	958	854.25	1515	852.42	310	852.35	280	852.00	190
30	852.23	229	852.56	380	852.39	296	852.44	320	.....	.....	856.62	4270	853.48	916	853.27	782	855.12	2332	852.35	280	852.31	264	851.77	144
31	852.25	235	.....	....	852.33	272	852.39	296	.....	.....	856.71	4405	.....	.....	853.08	668	.....	.....	852.34	276	852.21	233	.....	.....

Monthly Discharge of Grand River at Galt for 1916-7

Drainage Area, 1,360 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October... (1916)	460	146	231	.34	.11	.17	.20
November. ''	400	182	253	.29	.13	.19	.21
December. ''	530	198	337	.39	.15	.25	.29
January .. (1917)	680	242	386	.50	.18	.28	.32
February.....	420	226	305	.31	.17	.22	.23
March.....	25,390	450	4,503	18.67	.33	3.31	3.82
April.....	10,824	818	2,634	7.96	.60	1.94	2.16
May.....	3,070	315	1,009	2.26	.23	.74	.85
June.....	2,519	400	909	1.85	.29	.67	.75
July.....	10,450	276	2,494	7.69	.20	1.83	2.11
August.....	656	190	291	.48	.14	.21	.24
September.....	248	144	205	.18	.11	.15	.17
The year.....	25,390	144	1,138	18.67	.11	.84	11.36

Grand River at Glen Morris

Location—At the Glen Morris bridge, in the Village of Glen Morris, Township of South Dumfries, County of Brant.

Records Available—Discharge measurements from August, 1912. Daily gauge heights, from July 21, 1913.

Drainage Area—1,390 square miles.

Gauge—Vertical steel staff 0 to 12 feet on the second pier from the left bank. Elevation of the zero on gauge is 801.00, which has remained unchanged since established.

Channel and Control—The channel is straight for 1,000 feet above and below the section. The bed of the river is composed of gravel and boulders, and banks are permanent. The bed and control is shifting under high water conditions.

Discharge Measurements—Made from bridge during the high water stages, and at permanent wading section located 150 feet upstream during the lower water periods.

Winter Flow—This section is seriously affected by ice which usually floods, forming as many as three or four layers of ice with water between them. Measurements are made during the winter months to determine the winter flow.

Regulation—This section is subject to fluctuations in the river stage, due to the storing of water, during the night and at week ends, by the Galt dam, located eight miles above.

Accuracy—Owing to poor natural conditions, the liability of the control to shift and back water caused by ice, the records cannot be considered better than fair.

Observer—Alfred Forbes, Glen Morris P.O.

Discharge Measurements of Grand River at Glen Morris in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 12....	Yeates, W.	171	167	1.15	802.37	192	.....
Dec. 13....	"	277	403	.98	802.54	396 (a)	.....
1917							
Jan. 20....	"	247	289	1.18	803.77	342 (a)	.....
Feb. 3....	"	210	250	1.19	803.81	298 (a)	.....
Mar. 6....	Roberts, E.	248	319	1.35	804.58	429 (b)	.....
Apr. 26....	"	276	702	2.18	803.60	1,533	.....
July 28....	"	188	245	1.89	802.70	463	.....
Aug. 22....	" ..	187	196	1.38	802.52	276	.....
Sept. 28....	Yeates, W.	182	170	1.12	802.39	191	.....
Oct. 25....	" ...	272	463	.99	802.72	458	.....

(a) Ice measurement.
(b) Ice measurement. Some velocities estimated.

Daily Gauge Height and Discharge of Grand River at Glen Morris for 1916-7

Drainage Area. 1,390 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	802.37	375	802.50	230	802.87	540	803.33	364	803.96	434	804.46	434	806.54	8578	803.33	1059	803.12	812	805.58	5768	802.62	316	802.54	258
2	802.37	375	802.42	190	802.92	590	803.37	398	803.92	398	804.62	590	807.54	8578	803.54	1364	803.29	1008	808.85	18130	802.67	356	802.54	258
3	802.33	355	802.50	230	802.79	461	803.37	356	803.87	356	804.50	470	807.75	12955	803.62	1492	803.21	912	806.67	9001	802.83	500	802.46	210
4	802.37	375	802.46	210	802.71	389	803.42	398	803.79	293	804.50	470	806.08	7182	803.54	1364	803.12	812	804.62	3424	802.71	389	802.54	258
5	802.33	355	802.42	190	802.75	425	803.67	590	803.96	434	804.67	540	805.33	5118	803.33	1059	803.08	768	804.00	2150	802.54	258	802.62	316
6	802.33	355	802.42	190	802.71	389	803.83	770	803.92	398	804.58	452	805.37	5222	803.46	1240	803.00	680	803.58	1428	802.58	286	802.54	258
7	802.33	355	802.42	190	802.79	461	803.79	670	803.87	356	804.50	380	805.12	4590	803.62	1492	803.00	680	803.29	1008	802.54	258	802.50	230
8	802.21	304	802.42	190	802.92	590	803.79	670	803.96	348	804.58	452	804.67	3534	803.54	1364	803.04	724	803.29	1008	802.62	316	802.54	258
9	802.29	336	802.46	210	802.75	425	803.83	660	803.87	279	804.58	452	804.33	2803	803.46	1240	803.00	680	803.92	2006	802.62	316	802.33	152
10	802.29	336	802.54	258	802.75	340	803.87	700	803.79	225	804.54	416	804.00	2150	803.37	1111	803.00	680	806.62	8836	803.12	812	802.54	258
11	802.29	336	802.54	258	802.71	308	803.87	645	803.79	225	804.58	452	803.71	1637	803.21	912	803.00	680	806.92	9850	802.87	540	802.54	258
12	802.29	336	802.54	258	802.85	364	803.92	700	803.87	279	804.92	810	803.75	1705	803.12	812	802.96	636	805.83	6457	802.67	356	802.46	210
13	802.37	375	802.54	258	802.58	195	803.87	590	803.87	215	805.12	1050	804.42	2992	802.96	636	802.87	540	805.33	5118	802.58	286	802.37	168
14	802.37	375	802.50	230	802.67	215	803.87	590	803.92	244	805.75	2060	804.21	2560	802.87	540	803.04	724	805.87	6573	802.67	356	802.46	210
15	802.46	426	802.54	258	803.42	925	803.75	425	804.00	300	805.75	2060	803.58	1428	802.83	500	803.46	1240	805.83	6457	802.58	286	802.46	210
16	802.46	426	802.50	230	803.50	960	803.83	500	804.00	300	805.37	1410	803.46	1240	802.79	461	803.42	1180	804.92	4108	802.58	286	802.37	168
17	802.42	402	802.46	210	803.75	1360	803.79	416	804.00	300	805.58	1760	803.46	1240	802.71	389	803.21	912	804.21	2560	802.54	258	802.35	152
18	802.37	375	802.37	168	803.92	1490	803.83	452	803.92	190	805.21	1170	803.37	1111	802.71	389	803.17	867	804.00	2150	802.46	210	802.29	137
19	802.46	426	802.46	210	803.87	1410	803.79	372	803.96	210	805.25	1220	803.37	1111	802.75	425	803.42	1180	803.71	1637	802.37	168	802.37	168
20	802.79	680	802.46	210	803.67	1050	803.79	372	803.96	210	805.00	900	803.46	1240	802.96	636	803.37	1111	803.58	1428	802.46	210	802.42	190
21	802.96	855	802.42	190	803.50	845	803.75	340	804.00	230	805.87	3530	804.17	2480	803.04	724	803.12	812	803.50	1300	802.46	210	802.37	168
22	802.87	760	802.37	168	803.29	560	803.79	372	804.04	258	806.17	5740	804.46	3076	803.00	680	802.96	636	803.37	1111	802.46	210	802.33	152
23	802.83	720	802.54	258	803.50	790	803.79	372	804.08	220	805.25	4920	804.21	2560	804.08	2302	802.87	540	803.21	912	802.54	258	802.25	125
24	802.75	645	802.62	316	803.33	550	803.79	372	804.08	220	808.50	16350	803.92	2006	805.17	4715	802.96	636	803.17	867	802.62	316	802.29	137
25	802.67	665	802.46	210	803.33	550	803.79	372	804.08	220	810.04	24570	803.58	1428	804.87	3991	803.25	960	802.96	636	802.67	356	802.37	168
26	802.58	505	802.71	389	803.25	425	803.79	372	804.25	340	810.67	28270	803.58	1428	804.37	2887	803.54	1364	802.83	500	802.67	356	802.33	152
27	802.54	478	802.75	425	803.37	540	803.79	372	804.25	340	810.71	28510	803.58	1428	803.83	1844	804.50	3160	802.79	461	802.62	316	802.37	168
28	802.46	426	802.67	356	803.29	416	803.71	237	804.37	356	809.08	19334	803.54	1364	803.50	1300	804.08	2302	802.71	389	802.67	356	802.37	168
29	802.46	426	802.75	425	803.33	452	803.87	356	.....	....	806.71	9134	803.37	1111	803.25	960	803.92	2006	802.62	316	802.71	389	802.37	168
30	802.50	450	802.79	461	803.42	490	803.87	356	.....	....	805.33	5118	803.33	1059	803.21	912	804.46	3076	802.62	316	802.62	316	802.29	137
31	802.46	426	.....	....	803.29	372	803.96	434	.....	....	805.12	4590	.....	.....	803.00	680	.....	....	802.62	316	802.62	316	.....	....

Monthly Discharge of Grand River at Glen Morris for 1916-7

Drainage Area, 1,390 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	855	304	453	.62	.22	.33	.38
November "	461	168	253	.33	.12	.18	.20
December "	1,490	195	607	1.07	.14	.44	.51
January .. (1917)	770	237	471	.55	.17	.34	.39
February	434	190	292	.31	.14	.21	.22
March.....	28,510	380	5,407	20.51	.27	3.89	4.48
April.....	12,955	1,111	3,164	9.32	.80	2.28	2.54
May.....	4,715	389	1,274	3.39	.28	.92	1.06
June	3,160	540	1,077	2.27	.39	.77	.86
July.....	18,130	316	3,426	13.04	.23	2.46	2.84
August.....	812	168	328	.58	.12	.24	.28
September.....	316	125	196	.23	.09	.14	.16
The year.....	28,510	125	1,424	20.51	.09	1.02	13.90

Grand River at York

Location—At the highway bridge in the Village of York, Township of Oneida, County of Haldimand.

Records Available—From June 25, 1913.

Drainage Area—2,280 square miles.

Gauge—Vertical steel staff 0 to 6 feet on the first pier from left abutment and 6 to 12 feet on the left abutment. The elevation of zero is 593.00, and has remained unchanged since established.

Channel and Control—The flow is confined between the abutments of the bridge at all stages. The bed of the river is well protected, but shifting during flood stages. A partly demolished dam about 200 feet downstream affects flow, especially at low stages. Part of this old dam is washed out at each flood period.

Discharge Measurements—Taken from the highway bridge, and at a permanent low water section located 800 feet above during the low water period.

Floods—No floods of a serious nature have occurred here since the spring of 1912, when the dam below the bridge was wrecked, the water cutting around the right abutment, greatly increasing the width of the channel. Village residents state the water rose to a gauge height of 606 feet, which would mean approximately 100,000 second feet.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice, and measurements are made to determine the winter flow.

Regulation—The nearest dam is at Caledonia, five miles above. The intermittent operation of the mills causes daily fluctuations in the gauge heights.

Accuracy—The conditions of flow are good, except for the fluctuations caused through the Caledonia Mills. Well-defined rating curves have been established, and the records can be considered good. Semi-daily gauge heights will not give a good representative mean.

Observer—Fred. Brown, York P.O.

Discharge Measurements of Grand River at York in 1917

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Jan. 4....	Yeates, W.	370	1009	.67	594.17	674 (a)	.....
" 19....	"	332	940	.80	594.37	755 (a)	.....
Feb. 1....	"	330	907	.70	594.25	636 (a)	.....
Mar. 1....	Roberts, E.....	377	1,178	1.23	595.35	1,457 (b)	.....
" 26....	"	400	3,475	7.41	600.02	25,749 (c)	.....
" 27....	"	400	3,795	8.29	600.83	31,460 (c)	.....
" 28....	"	400	3,676	8.29	600,56	30,488 (c)	.....
" 28....	"	400	3,616	7.77	600.42	28,082 (c)	.....
Apr. 2....	Yeates, W.....	382	2,894	5.25	598.58	15,192 (c)	.....
" 3....	Roberts, E.....	400	3,117	6.22	599.17	19,403 (c)	.....
" 3....	"	400	3,117	6.00	599.17	18,708 (c)	.....
" 3....	"	400	3,106	5.86	599.10	18,204 (c)	.....
" 4....	"	382	2,780	4.98	598.27	13,830 (c)	.....
" 4....	"	382	2,674	4.60	598.02	12,308 (c)	.....
" 4....	"	382	2,474	4.67	597.48	11,553 (c)	.....
" 24....	"	350	1,635	1.85	595.23	3,022 (d)	.....
May 18....	Yeates, W.....	340	1,187	.76	593.96	897	.....
July 30....	Roberts, E.....	340	1,187	.75	593.90	894	.....
Aug. 24....	Yeates, W.....	336	1,085	.63	593.67	679	.....
Oct. 11....	"	338	1,018	.53	593.48	534	.....
" 12....	"	338	1,018	.54	593.47	547	.....

(a) Ice measurement.
(b) Ice measurement. Mostly all estimated velocities.
(c) Surface velocities recorded and co-efficient applied.
(d) Part of dam below has been washed out.

Daily Gauge Height and Discharge of Grand River at York for 1916-7

Drainage Area, 2,280 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	593.14	276	593.71	690	594.21	1320	594.33	865	594.21	590	595.33	1430	596.50	6350	594.48	1748	594.96	2564	596.12	5226	593.79	780	593.64	620
2	593.39	396	593.71	690	594.08	1120	594.25	755	594.33	715	595.27	1330	598.19	13310	594.42	1652	594.94	2526	598.67	15852	593.79	780	593.58	565
3	593.50	460	593.69	670	594.08	1120	594.29	780	594.33	660	595.12	1130	599.12	18578	594.77	2219	594.71	2117	597.75	11205	593.89	890	593.62	600
4	593.48	448	593.60	580	594.04	1070	594.12	600	594.10	430	594.92	865	597.87	11752	594.85	2360	594.56	1876	596.39	6010	594.00	1020	593.54	530
5	593.42	412	593.46	472	594.00	1020	594.62	1180	594.10	405	594.73	660	597.00	8090	594.83	2324	594.46	1716	595.71	4174	593.87	865	593.58	565
6	593.42	412	593.60	580	594.12	1180	594.75	1260	594.08	372	594.83	770	596.87	7602	594.67	2052	594.35	1540	595.17	2970	593.83	825	593.62	600
7	593.46	436	593.58	565	594.06	1100	594.77	1400	594.12	368	594.73	660	597.21	8920	594.81	2288	595.42	3504	594.75	2185	593.75	735	593.58	565
8	593.23	315	593.58	565	594.04	1070	594.83	1480	594.29	425	594.87	810	596.58	6606	594.83	2324	595.35	3350	594.79	2253	593.75	735	593.60	580
9	593.33	365	593.67	650	594.25	1380	594.81	1430	594.25	380	595.17	1180	596.21	5479	594.64	2004	595.02	2678	595.17	2970	593.83	825	593.54	530
10	593.42	412	593.62	600	594.04	1050	594.98	1700	594.29	376	595.17	1180	595.79	4366	594.50	1780	594.69	2084	597.17	8760	593.83	825	593.52	515
11	593.42	412	593.56	550	594.17	1200	594.67	1200	594.12	307	595.87	2400	595.31	3262	594.35	1540	594.52	1812	598.04	12566	594.25	1380	593.50	500
12	593.33	365	593.46	472	594.08	1050	594.56	1030	594.27	348	596.54	3890	595.08	2792	594.12	1180	594.35	1540	597.29	9240	594.04	1070	593.50	500
13	593.33	365	593.62	600	594.04	970	594.50	950	594.29	356	596.58	4100	595.25	3135	594.21	1316	594.25	1380	596.79	7315	593.92	925	593.50	500
14	593.46	436	593.77	755	593.98	880	594.44	880	594.25	340	596.46	3930	595.31	3262	594.14	1210	594.23	1348	596.29	5711	593.79	780	593.29	376
15	593.27	335	593.83	825	594.29	1260	594.42	845	594.25	340	596.71	4070	595.04	2716	594.10	1150	594.46	1716	597.50	10110	593.75	735	593.27	368
16	593.42	412	593.73	715	594.00	855	594.44	855	594.23	334	596.33	3980	594.83	2324	594.00	1020	594.79	2253	596.37	5950	593.69	670	593.14	322
17	593.71	620	593.60	580	593.98	810	594.31	715	594.21	328	596.42	4440	594.67	2052	594.00	1020	594.83	2324	595.92	4692	593.71	690	593.33	395
18	593.48	448	593.71	690	594.37	1290	594.33	725	593.96	291	596.56	5060	594.62	1972	593.89	890	594.54	1844	595.85	4515	593.67	650	593.33	395
19	593.50	460	593.50	500	594.37	1260	594.31	690	594.00	295	596.71	7040	594.46	1716	593.79	780	594.35	1540	595.52	3726	593.50	500	593.35	405
20	593.79	680	593.48	486	594.17	960	594.33	715	594.39	400	596.50	6350	594.60	1940	594.10	1150	594.58	1908	595.23	3093	593.56	550	593.35	405
21	594.12	1040	593.64	620	594.04	790	594.17	555	594.44	425	596.33	5830	594.79	2253	594.50	1780	594.77	2219	595.00	2640	593.67	650	593.42	444
22	594.17	1100	593.64	620	594.25	1010	594.08	486	594.42	415	596.21	5480	595.37	3394	594.56	1876	594.48	1748	594.81	2288	593.50	500	593.37	415
23	594.21	1150	593.52	515	594.37	1140	594.14	530	594.21	328	596.54	6480	595.75	4270	594.71	2117	594.25	1380	594.58	1908	593.52	515	593.25	360
24	594.04	950	593.77	755	594.33	1060	594.12	516	594.27	348	597.58	10450	595.27	3177	596.12	5226	594.12	1180	594.33	1508	593.62	600	593.33	395
25	593.87	760	593.71	690	594.33	1030	594.14	530	594.02	297	599.92	24180	595.04	2716	596.21	5479	594.27	1412	594.25	1380	593.75	735	593.46	472
26	593.81	700	593.58	565	594.29	960	594.12	515	594.75	680	600.14	25850	594.89	2432	596.21	5479	594.79	2253	594.37	1572	593.62	600	593.37	415
27	593.79	680	593.54	530	594.25	890	594.12	515	595.67	1970	600.56	29220	594.83	2324	595.62	3958	595.69	4126	594.21	1316	593.71	690	593.35	405
28	593.69	600	593.83	825	594.17	780	594.08	486	595.37	1490	600.50	28730	594.79	2253	595.17	2970	596.31	5770	594.12	1180	593.71	690	593.33	395
29	593.58	515	593.89	890	594.42	1050	594.08	486	.....	.....	598.19	13310	594.75	2185	594.92	2488	596.75	4270	593.96	970	593.69	670	593.37	415
30	593.62	545	593.94	950	594.33	910	594.12	515	.....	.....	597.00	8090	594.46	1716	594.81	2288	595.62	3958	593.96	970	593.71	690	593.39	376
31	593.64	560	.....	.....	594.29	845	594.12	515	.....	.....	596.33	5830	.....	.....	594.52	1812	.....	.....	593.87	870	593.67	650	.....	.....

Monthly Discharge of Grand River at York for 1916-7

Drainage Area, 2,280 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October. (1916)	1150	276	550	.50	.12	.24	.28
November "	950	472	640	.42	.21	.28	.31
December "	1,380	780	1,046	.61	.34	.46	.53
January (1917)	1,700	486	832	.75	.21	.36	.42
February	1,970	291	501	.86	.13	.22	.23
March	29,220	660	7,080	12.82	.29	3.10	3.57
April	18,578	1,716	4,765	8.14	.75	2.09	2.33
May	5,479	780	2,175	2.40	.34	.95	1.10
June	5,770	1,180	2,331	2.53	.52	1.02	1.14
July	15,852	870	4,681	6.95	.38	2.05	2.36
August	1,380	500	750	.61	.22	.33	.38
September	620	322	464	.27	.14	.20	.22
The year	29,220	276	2,166	12.82	.12	.95	12.895

Nith River near Canning

Location—At the highway bridge 200 feet upstream from the Grand Trunk Railway bridge, lot 2, concession 2, Township of Blenheim, County of Oxford, 1 mile from the Village of Canning.

Records Available—From July 5, 1913.

Drainage Area—430 square miles.

Gauge—Vertical steel staff 0 to 3 feet on pile in centre of stream and 3 to 12 feet on left abutment. Elevation of zero on gauge is 799.00, which has remained unchanged since established.

Channel and Control—Slightly shifting bed; both banks permanent under ordinary conditions. Control only affected by ice jams during the early freshet.

Discharge Measurements—Made from the bridge during high-water stages, and from a permanent wading section 100 feet above during the low-water period.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice during the winter, and measurements are made to determine the winter flow.

Regulation—Fluctuations of a serious nature occur in the river stage at this section, caused through the intermittent operation of the milling plant at Canning, 1½ miles above.

Accuracy—On account of stage variations, these records are not very reliable.

Observer—Lewis Baker, Canning P.O.

Discharge Measurements of Nith River near Canning in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Nov. 2....	Yeates, W.....	93	79	1.77	801.17	140	.....
Dec. 11....	"	94	87	2.10	801.32	182	.....
1917							
Jan. 3....	"	95	80	1.85	801.94	149 (a)	.....
" 17....	"	97	94	1.93	802.30	181 (a)	.....
Feb. 8....	"	95	54	1.12	801.52	61 (a)	.....
Mar. 3....	Roberts, E.	97	104	1.87	802.85	195 (a)	.....
Apr. 25....	"	96	130	2.96	802.06	386 (b)	.....
May 26....	Yeates, W.....	115	414	3.07	803.60	1,273	.....
June 11....	Roberts, E.....	94	110	2.37	801.67	259	.....
July 27....	"	95	102	2.28	801.19	233	.....
Aug. 22....	Yeates, W.....	93	57	1.47	800.92	84	.....
" 23....	Roberts, E.....	93	72	1.74	801.14	126	.....
ept . 18....	Yeates, W.....	93	74	1.53	801.12	114	.....
Sct. 22....	"	95	109	2.28	801.64	249	.....

(a) Ice measurement.
(b) Surface velocities recorded and co-efficient applied.

Daily Gauge Height and Discharge of Nith River near Canning for 1916-7

Drainage Area, 430 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	800.98	107	801.04	111	801.37	174	802.00	180	802.21	162	802.52	144	803.33	1020	801.71	263	802.04	374	804.08	1530	801.14	128	801.27	154
2	800.77	82	801.10	120	801.33	166	801.96	172	802.10	140	802.60	160	804.31	1700	801.92	332	802.06	381	805.79	2990	801.25	150	800.71	62
3	800.92	98	801.02	108	801.23	146	801.92	144	802.02	124	802.64	148	805.44	2670	802.46	545	801.89	322	806.04	3222	801.25	150	801.06	114
4	800.98	107	801.06	114	801.39	178	801.98	156	801.85	98	802.73	166	803.96	1440	802.44	535	801.67	251	803.71	1260	801.10	120	801.21	142
5	801.04	116	800.85	83	801.44	190	802.12	185	801.81	92	802.67	154	803.35	1030	802.10	395	801.73	269	802.29	466	801.48	200	801.19	138
6	800.94	101	801.14	128	801.29	158	802.44	272	801.92	108	802.64	148	803.79	1310	801.98	353	801.79	287	801.96	346	801.29	158	801.12	124
7	800.98	107	801.14	128	801.23	146	802.42	266	801.96	114	802.77	174	804.25	1650	801.98	353	802.25	450	801.77	381	801.21	142	801.12	124
8	800.85	90	801.04	111	801.14	128	802.44	272	801.62	63	802.77	174	803.75	1290	802.10	395	802.19	427	802.06	381	801.18	136	801.23	146
9	800.87	92	801.10	120	801.35	170	802.31	233	801.87	85	802.64	148	802.96	805	801.89	322	801.81	294	803.04	847	801.35	170	800.83	79
10	800.81	86	800.98	102	801.14	128	802.29	227	801.92	93	802.64	148	802.25	450	801.75	275	801.69	257	805.17	2420	801.58	225	800.89	88
11	800.89	94	801.23	146	801.35	170	802.31	207	801.98	102	802.87	198	802.21	434	801.73	269	801.48	200	804.94	2220	801.39	178	801.08	117
12	800.94	101	801.12	124	801.23	126	802.27	198	802.12	124	803.75	492	802.06	381	801.54	215	801.35	170	804.14	1570	801.35	170	801.06	114
13	801.04	116	801.33	166	801.50	180	802.29	202	802.08	117	804.56	915	802.10	395	801.31	162	801.27	154	803.89	1380	801.29	158	801.19	138
14	801.14	133	801.14	128	801.64	215	802.33	213	802.04	111	805.39	1460	802.04	374	801.52	210	801.42	185	803.54	1150	801.23	146	801.19	138
15	801.04	116	801.12	124	802.02	332	802.35	217	802.06	99	805.31	1400	802.02	367	801.39	178	801.79	287	804.67	1980	801.27	154	801.14	128
16	800.56	63	801.00	105	802.25	343	802.27	198	802.08	102	804.69	995	802.02	367	801.27	154	802.31	475	804.21	1620	801.19	138	801.19	138
17	801.00	110	801.02	108	802.35	378	802.23	166	802.10	105	804.71	1010	802.02	367	801.37	174	801.79	287	803.67	1240	801.06	114	801.14	128
18	801.27	162	801.14	128	802.31	364	802.19	158	801.94	81	805.73	1710	801.92	332	801.25	150	801.71	263	803.10	880	801.19	138	801.19	138
19	801.37	191	801.14	128	802.31	294	802.10	140	801.60	36	805.83	1790	801.92	332	801.44	190	801.48	200	802.75	690	800.94	96	801.14	128
20	801.44	212	801.04	111	802.23	269	802.21	162	801.75	41	805.31	1400	802.00	360	801.71	263	803.33	1020	802.21	434	800.96	96	801.12	124
21	801.44	212	801.02	108	802.19	257	802.08	136	802.35	130	805.44	1800	802.12	402	802.14	409	802.33	484	802.06	381	801.19	138	801.19	138
22	801.31	173	801.02	108	802.14	242	802.10	140	802.25	113	805.62	2290	802.02	367	802.23	442	801.72	266	801.96	346	800.79	74	801.14	128
23	801.29	167	801.06	114	802.08	200	802.23	166	802.27	115	805.12	2110	802.23	442	802.44	535	801.46	195	801.85	308	801.10	120	801.10	120
24	801.23	152	801.14	128	802.19	228	802.29	178	802.27	115	806.46	3613	802.14	409	804.52	1860	801.44	190	801.77	281	801.21	142	801.19	138
25	801.17	139	801.25	150	802.14	215	802.25	170	802.37	134	807.64	4710	802.14	409	804.94	2220	801.52	210	801.77	281	801.31	162	800.79	73
26	801.14	133	801.52	210	802.25	245	802.19	158	802.56	152	806.77	3901	802.02	367	803.87	1370	801.87	315	801.67	251	800.98	102	801.02	108
27	801.14	133	801.35	170	802.27	251	802.04	128	802.60	160	805.29	2530	802.10	395	802.85	745	804.48	1830	801.48	200	800.90	90	800.71	61
28	801.12	129	801.25	150	802.33	269	801.98	117	802.56	152	804.06	1510	801.73	269	802.42	525	803.87	1370	801.42	185	801.14	128	800.58	44
29	800.81	86	801.35	170	802.19	228	802.12	144	.....	.....	803.79	1310	801.71	263	802.08	388	803.37	1040	801.25	150	801.19	138	801.06	114
30	801.08	122	801.44	190	802.10	205	802.25	170	.....	.....	803.73	1275	801.69	257	801.98	353	803.33	1020	801.23	146	801.23	146	801.10	120
31	801.04	116	.....	.....	802.04	190	802.27	174	.....	.....	803.50	1125	.....	.....	801.83	301	.....	.....	801.29	158	801.21	142	.....	....

Monthly Discharge of Nith River near Canning for 1916-7

Drainage Area, 430 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square-mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1916)	212	63	124	.49	.15	.29	.33
November "	210	83	130	.49	.19	.30	.33
December. "	378	126	219	.88	.29	.51	.59
January.. (1917)	272	117	182	.63	.27	.42	.48
February.....	162	36	110	.38	.08	.26	.27
March.....	4,710	144	1,262	10.95	.33	2.93	3.38
April	2,670	257	688	6.21	.60	1.60	1.79
May.....	2,220	150	481	5.16	.35	1.12	1.29
June	1,830	154	449	4.26	.36	1.04	1.16
July.....	3,222	146	958	7.49	.34	2.23	2.57
August	225	74	140	.52	.17	.33	.38
September	154	61	117	.36	.14	.27	.30
The year.....	4,710	36	408	10.95	.08	.95	12.88

Speed River near Guelph

Location—At Caraher's highway bridge above the junction of the Speed and Eramosa Rivers and 3¾ miles from the City of Guelph, Township of Guelph, County of Wellington.

Records Available—From October 27, 1913.

Drainage Area—77 square miles.

Gauge—Vertical steel staff 0 to 12 feet, one on each abutment of bridge. Elevation of zero on each gauge is 1126.00, which has remained unchanged since established.

Channel and Control—The channel is straight for 250 feet above and 500 feet below the gauging section. During flood stages the control and banks are liable to shift, as the bed is composed of loose gravel. One channel exists at all stages.

Discharge Measurements—Made from the bridge and from a permanent low water section 300 feet downstream.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice during the winter season, and measurements are taken during that period to determine the winter flow.

Regulation—A small mill is operated one mile and a half upstream. Slight fluctuations are caused only in the dry season, and are hardly noticeable at the gauge.

Accuracy—The open channel rating curve is fairly well defined for flows up to 500 second feet, the discharge for low flows being considered good.

Observer—Hugh Caraher, Guelph.

Discharge Measurements of Speed River near Guelph in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Oct. 6....	Yeates, W.....	49	13	.26	1,127.98	3	.....
1917							
April 3....	"	70	175	2.20	1,129.61	385	.....
May 14....	"	55	40	.82	1,128.29	33	.....
" 22....	"	57	52	1.13	1,128.46	59	.....
June 22....	Roberts, E.....	54	34	.72	1,128.23	24	.....
Sept. 25....	Yeates, W.....	51	16	.22	1,128.00	3	.....
Oct. 27....	"	54	37	.75	1,128.27	27	.....

Daily Gauge Height and Discharge of Speed River near Guelph for 1916-7

Drainage Area, 77 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1127.92	8	1128.08	11	1128.29	36	1128.71	24	1129.02	26	1129.56	46	1129.67	445	1128.62	99	1128.33	41	1130.50	775	1128.00	4	1128.08	11
2	1127.92	8	1128.08	11	1128.19	22	1128.67	20	1129.04	29	1129.56	46	1130.14	635	1128.67	111	1128.39	50	1129.87	525	1128.00	4	1128.08	11
3	1127.92	8	1128.08	11	1128.17	20	1128.71	24	1129.06	31	1129.58	49	1129.89	535	1128.56	86	1128.37	47	1128.96	186	1128.12	15	1128.00	4
4	1127.92	8	1128.08	11	1128.25	30	1128.67	20	1129.08	34	1129.62	40	1129.27	286	1128.54	81	1128.35	45	1128.71	120	1128.00	4	1128.00	4
5	1127.92	8	1128.08	11	1128.21	24	1128.79	36	1129.12	40	1129.62	40	1129.10	227	1128.58	90	1128.27	33	1128.54	81	1128.00	4	1128.00	4
6	1127.92	8	1128.08	11	1128.25	30	1128.87	33	1129.12	40	1129.67	47	1128.96	186	1128.58	90	1128.27	33	1128.46	65	1128.06	9	1128.00	4
7	1127.92	8	1128.08	11	1128.21	24	1129.92	40	1129.08	34	1129.64	42	1128.96	186	1128.62	99	1128.31	39	1128.23	27	1128.00	4	1128.00	4
8	1127.92	8	1128.12	15	1128.25	30	1128.92	40	1129.19	36	1129.58	34	1128.83	151	1128.50	73	1128.42	56	1128.39	50	1128.06	9	1128.00	4
9	1127.92	8	1128.12	15	1128.25	30	1128.96	46	1129.17	33	1129.62	49	1128.75	130	1128.50	73	1128.44	60	1128.71	120	1128.52	77	1128.00	4
10	1127.92	8	1128.04	8	1128.17	20	1128.96	46	1129.12	26	1129.54	17	1128.60	94	1128.46	65	1128.33	41	1129.17	251	1128.33	41	1128.00	4
11	1127.92	8	1128.00	4	1128.17	10	1128.85	30	1129.08	21	1129.54	17	1128.58	90	1128.33	41	1128.29	36	1129.25	280	1128.21	24	1128.00	4
12	1127.92	8	1128.00	4	1128.17	10	1128.85	30	1129.08	21	1129.58	21	1128.52	77	1128.37	47	1128.21	24	1129.04	209	1128.17	20	1127.92	1
13	1127.96	11	1128.08	11	1128.14	8	1128.87	33	1129.08	21	1129.71	39	1128.50	73	1128.29	36	1128.17	20	1128.87	162	1128.08	11	1127.92	1
14	1128.08	19	1128.08	11	1128.39	36	1128.83	27	1129.08	21	1129.73	41	1128.50	73	1128.35	45	1128.62	99	1129.87	525	1128.08	11	1127.92	1
15	1128.08	19	1128.08	11	1128.42	40	1128.83	27	1129.23	27	1129.77	33	1128.50	73	1128.33	41	1128.56	86	1129.08	221	1128.08	11	1127.92	1
16	1128.08	19	1128.08	11	1128.46	31	1128.83	27	1129.27	33	1129.77	33	1128.50	73	1128.25	30	1128.44	60	1128.58	90	1128.10	13	1127.92	1
17	1128.08	19	1128.08	11	1128.50	37	1128.83	27	1129.17	20	1130.37	162	1128.46	65	1128.33	41	1128.33	41	1128.46	65	1128.02	6	1127.92	1
18	1128.00	13	1128.08	11	1128.46	31	1128.87	33	1129.25	30	1130.67	365	1128.50	73	1128.35	45	1128.25	30	1128.44	60	1128.02	6	1127.92	1
19	1128.12	23	1128.08	11	1128.50	37	1128.87	20	1129.27	33	1130.29	333	1128.46	65	1128.35	45	1128.35	45	1128.46	65	1128.00	4	1127.92	1
20	1128.46	67	1128.08	11	1128.67	67	1128.79	12	1129.23	27	1130.42	505	1128.42	56	1128.33	41	1128.31	39	1128.44	60	1128.00	4	1127.92	1
21	1128.42	60	1128.08	11	1128.67	47	1128.79	12	1129.21	24	1130.46	640	1128.42	56	1128.32	41	1128.21	24	1128.37	47	1128.00	4	1127.92	1
22	1128.35	50	1128 17	20	1128.50	23	1128.71	5	1129.33	41	1130.75	875	1128.83	151	1128.48	69	1128.21	24	1128.25	30	1128.00	4	1127.92	1
23	1128.33	47	1128.17	20	1128.50	23	1128.79	12	1129.37	47	1132.12	1420	1128.75	130	1129.25	280	1128.46	65	1128.29	36	1128.00	4	1127.92	1
24	1128.37	52	1128.27	33	1128.50	23	1128.87	20	1129.50	73	1132.52	1580	1128.67	111	1129.04	209	1128.42	56	1128.25	30	1128.00	4	1127.92	1
25	1128.37	52	1128.50	73	1128.50	23	1128.87	20	1129.46	65	1132.81	1700	1128.58	90	1128.79	141	1128.50	73	1128.19	22	1128.00	4	1127.92	1
26	1128.08	19	1128.42	56	1128.50	13	1128.83	16	1129.54	81	1132.37	1520	1128.54	81	1128.42	56	1128.75	130	1128.25	30	1128.00	4	1127.92	1
27	1128.08	19	1128.33	41	1128.50	13	1128.87	20	1129.56	86	1131.08	1010	1128.58	90	1128.35	43	1128.57	162	1128.00	4	1128.00	4	1127.92	1
28	1128.08	19	1128.17	20	1128.67	33	1128.92	26	1129.56	86	1130.04	595	1128.60	94	1128.35	45	1128.54	81	1128.08	11	1128.00	4	1127.92	1
29	1128.04	16	1128.25	30	1128.64	29	1128.92	26	.....	....	1129.50	377	1128.50	73	1128.35	45	1128.81	146	1128.08	11	1128.02	6	1127.92	1
30	1128.00	13	1128.42	56	1128.62	26	1128.92	26	.....	....	1129.29	293	1128.62	99	1128.27	33	1128.83	151	1128.04	8	1128.08	11	1127.92	1
31	1128.00	13	.....	....	1128.67	20	1129.02	40	.....	....	1129.52	385	.....	....	1128.25	30	.....	....	1128.25	30	1128.08	11	.....	....

Monthly Discharge of Speed River near Guelph for 1916-7

Drainage Area, 77 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October. ..(1916)	67	8	21	.87	.10	.27	.31
November "	73	4	19	.95	.05	.25	.28
December "	67	8	27	.87	.10	.35	.40
January (1917)	46	5	26	.60	.07	.34	.39
February	86	20	39	1.12	.26	.51	.53
March	1,700	17	398	22.08	.22	5.17	5.96
April.....	635	56	152	8.25	.73	1.97	2.20
May.....	280	30	73	3.64	.39	.95	1.10
June.....	162	20	61	2.10	.26	.79	.88
July	775	4	135	10.07	.05	1.75	2.02
August	77	4	11	1.00	.05	.14	.16
September	11	1	3	.14	.01	.04	.04
The year	1,700	1	81	22.08	.01	1.05	14.29

Speed River at Hespeler

Location—At a point 100 feet below the jail, which adjoins the power house, in the Town of Hespeler, Township of Waterloo, County of Waterloo.

Records Available—Discharge measurements from July 10, 1913. Daily gauge heights from October 23, 1913.

Drainage Area—250 square miles.

Gauge—Vertical steel staff 0 to 12 feet on jail wall adjoining power house. The elevation of zero on the gauge is 935.00.

Channel and Control—Straight for about 300 feet above and below the gauging section. Loose gravel forms the bed of this stream, which is decidedly shifting. The banks are low, and overflow when the water raises 2 feet above normal. Weeds at the control and in channel have a decided effect at the gauging section.

Discharge Measurements—Made from a permanent wading section 100 feet below the gauge during the low stages, and the dam 400 feet above will be used as a weir during the flood season.

Winter Flow—The relation of gauge height to discharge is somewhat affected by the presence of ice for a short period during the winter season.

Regulation—A dam 400 ft. above this section causes serious fluctuations in the river stage during the low water period.

Accuracy—Owing to the shifting bed and the presence of weeds at and below section, greatly interfering with the metering of stream, these records can only be classed as fair.

Observer—W. D. Scott, Hespeler.

Discharge Measurements of Speed River at Hespeler in 1916-7

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1916							
Dec. 12....	Yeates, W	90	91	1.28	936.39	117	.....
1917							
Jan. 5....	"	90	88	1.35	936.38	119	.....
" 18....	"	90	101	.98	936.58	99 (a)	.....
Feb. 2....	"	85	90	1.06	936.50	96 (b)	.....
Mar. 5....	Roberts, E....	90	113	1.11	936.54	125 (c)	.....
" 29....	Yeates, W	123	356	4.19	938.89	1,490	.....
" 30....	"	123	270	3.93	938.17	1,062	.....
April 27....	Roberts, E....	95	163	2.00	937.04	325	.....
" 27....	"	100	163	2.23	937.10	363	.....
" 27....	"	123	143	2.55	937.10	363	.....
July 3....	Yeates, W	123	259	3.36	938.10	871	.....
" 27....	Roberts, E....	94	95	1.28	936.46	122	.....
Aug. 21....	Yeates, W....	93	70	.77	936.21	54	.....
Sept. 28....	"	94	85	1.12	936.44	95	.....
Oct. 26....	"	95	106	1.27	936.55	134	.....

(a) Ice measurement.
(b) Ice on pond below section probably affects reading.
(c) Ice on control.

Daily Gauge Height and Discharge of Speed River at Hespeler for 1916-7

Drainage Area, 250 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	936.00	57	936.27	96	936.33	105	936.14	81	936.52	100	936.56	128	938.54	1230	937.06	339	936.73	204	938.62	1290	936.48	134	936.42	122
2	936.23	94	936.29	99	936.35	109	936.29	99	936.52	100	936.56	128	938.96	1540	937.08	348	936.71	197	939.25	1760	936.46	130	936.25	94
3	936.27	101	936.31	102	936.35	109	936.29	99	936.33	80	936.54	120	939.00	1570	937.06	339	936.71	197	938.27	1050	936.46	130	936.31	102
4	936.25	98	936.29	99	936.35	109	936.27	96	936.10	62	936.33	95	938.21	1010	937.14	378	936.73	204	937.56	600	936.46	130	936.44	126
5	936.25	98	936.17	85	936.31	102	936.29	99	936.31	78	936.44	102	938.17	980	937.12	368	936.73	204	937.42	525	936.14	81	936.46	130
6	936.23	94	936.29	99	936.33	105	936.29	98	936.46	96	935.92	60	938.37	1110	937.19	403	936.69	191	937.12	368	936.35	109	936.44	126
7	936.23	94	936.29	99	936.31	102	936.33	102	936.46	96	936.25	83	938.17	980	937.14	378	936.67	185	936.98	301	936.37	113	936.44	126
8	936.08	69	936.29	99	936.31	102	936.37	107	936.46	96	936.31	89	937.48	555	937.02	320	936.67	185	937.04	329	936.46	130	936.46	130
9	936.25	98	936.27	96	936.21	89	936.54	134	936.46	96	936.33	94	937.23	423	936.96	293	936.64	176	936.96	293	936.48	134	936.31	102
10	936.27	101	936.39	116	936.21	89	936.52	130	936.42	93	936.37	95	937.23	423	936.85	248	936.69	191	937.31	463	936.37	113	936.46	130
11	936.27	101	936.35	109	936.33	105	936.64	146	936.17	68	936.33	94	937.06	339	936.73	204	936.64	176	937.92	820	936.46	130	936.44	126
12	936.25	98	936.17	85	936.44	126	936.46	105	936.39	94	936.44	109	937.04	329	936.60	164	936.64	176	938.10	935	936.37	113	936.42	122
13	936.25	98	936.37	113	936.29	99	936.48	107	936.37	93	936.44	107	937.08	348	936.58	159	936.67	185	937.87	785	936.42	122	936.39	116
14	936.27	101	936.39	116	936.33	105	936.52	109	936.37	92	936.42	104	937.04	329	936.50	138	936.54	148	937.81	750	936.42	122	936.39	116
15	936.10	72	936.37	113	936.33	105	936.48	104	936.37	93	936.42	104	937.00	310	936.54	148	936.54	148	937.56	600	936.50	138	936.35	109
16	936.23	94	936.42	122	936.27	96	936.52	107	936.42	95	936.50	120	936.92	276	936.46	130	936.48	134	937.46	545	936.48	134	936.14	181
17	936.23	94	936.35	109	936.19	87	936.56	109	936.37	88	936.69	143	936.94	284	936.50	138	936.79	225	937.27	443	936.46	130	936.35	109
18	936.25	98	936.39	116	936.33	105	936.50	95	936.17	72	936.81	197	937.12	368	936.44	126	936.73	204	937.08	348	936.33	105	936.37	113
19	936.25	98	936.12	79	936.33	105	936.50	98	936.56	122	936.79	197	937.12	368	936.48	134	936.71	197	936.94	284	936.27	96	936.35	109
20	936.25	98	936.35	109	936.29	99	936.52	100	936.52	118	937.25	378	937.14	378	936.56	154	936.71	197	936.87	255	936.35	109	936.35	109
21	936.29	105	936.33	105	936.31	102	936.42	88	936.52	114	937.06	310	937.10	358	936.52	143	936.64	176	936.79	225	936.33	105	936.33	105
22	936.04	63	936.31	102	936.31	102	936.44	90	936.52	114	937.27	388	937.12	368	936.60	164	936.56	154	936.75	211	936.33	105	926.33	105
23	936.27	101	936.29	99	936.31	102	936.44	93	936.52	114	938.19	935	937.14	378	936.89	263	936.52	143	936.56	154	936.29	99	936.17	85
24	936.27	101	936.31	102	936.17	85	936.44	95	936.42	99	939.46	1915	937.10	358	937.69	679	936.67	185	936.54	148	936.33	105	936.35	109
25	936.27	101	936.42	122	936.14	81	936.48	96	936.31	86	939.87	2223	937.06	339	937.62	637	936.85	248	936.52	143	936.33	105	936.33	105
26	936.23	94	936.42	122	936.25	94	936.48	99	936.56	128	940.50	2695	937.08	348	937.67	667	937.14	378	936.58	159	936.21	89	936.31	102
27	936.27	101	936.37	113	936.25	94	936.33	79	936.58	132	940.94	3025	937.04	329	937.02	320	937.12	368	936.52	143	936.50	138	936.33	105
28	936.27	101	936.39	116	936.23	92	936.08	62	936.56	128	939.92	2260	937.04	329	936.79	225	937.17	393	936.48	134	936.52	143	936.31	102
29	936.14	78	936.42	122	936.25	94	936.46	94	.....	.....	939.02	1585	937.02	320	936.75	211	937.54	590	936.67	185	936.44	126	936.29	99
30	936.28	104	936.31	102	936.21	89	936.52	100	.....	.....	938.54	1233	937.06	339	936.75	211	938.75	1380	936.48	134	936.33	105	936.31	102
31	936.29	105	.....	.....	936.10	77	936.52	100	.....	.....	938.25	1033	.....	.....	936.77	219	.....	.....	936.48	134	936.39	116	.....	.....

Monthly Discharge of Speed River at Hespeler for 1916-7

Drainage Area, 250 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October .. (1916)	105	57	94	.42	.23	.38	.44
November "	122	85	106	.49	.34	.42	.47
December "	126	81	99	.50	.32	.40	.46
January (1917)	146	62	101	.58	.25	.40	.46
February	132	62	98	.53	.25	.39	.41
March.....	3,025	60	650	12.10	.24	2.60	3.00
April	1,570	276	554	6.28	1.10	2.22	2.48
May.....	679	126	279	2.72	.50	1.12	1.29
June	1,380	134	258	5.52	.54	1.03	1.15
July.....	1,760	134	468	7.04	.54	1.87	2.16
August.....	143	81	117	.57	.32	.47	.54
September	130	81	111	.52	.32	.44	.49
The year	3,025	57	246	12.10	.23	.98	13.35

Miscellaneous Measurements

River	Location	Date	Discharge in Sec-ft.
Blanche	Windago Lake	Jan. 22, 1917	203 (a)
Bonnechere	Golden Lake	Oct. 30, 1916	121 (b)
"	" "	Apr. 18, 1917	1,588 (b)
"	" "	Apr. 19, 1917	1,487 (b)
"	" "	May 8, 1917	1,500
Manitou	Devil's Cascades	Aug. 25, 1917	183
Sauble	Sauble Falls	Oct. 16, 1917	82
"	" "	Nov. 10, 1917	166
"	" "	Nov. 23, 1917	183
Spanish	Espanola	Oct. 18, 1916	2,750
"	"	Nov. 18, 1916	4,383
"	"	Dec. 12, 1916	8,705 (c)
"	"	Jan. 10, 1917	3,451 (c)
Western Counties Canal	Brantford	June 9, 1917	379
Winnipeg	Dalles Rapids	July 29, 1917	6,046
"	White Dog Falls, N. Chan.	Aug. 2, 1917	205
"	White Dog Falls, S. Chan.	Aug. 3, 1917	7,061

(a) Ice measurement.
(b) Dam below section under construction.
(c) Section partly ice-covered.

1912-13

Table Showing Run-Off as % Precipitation

River	Locality	District	Precipitation Station	Inches Precip'n.	Run-Off	%
Maitland	Ben Miller	South Western Ont.	Brucefield	40.03	27.83	69.2

1913-14

River	Locality	District	Precipitation Station	Inches Precip.n.	Run-Off	%
Maitland	Ben Miller	South Western Ont.	Brucefield	34.18	13.32	38.4
Beaver	Eugenia	" "	Collingwood	19.97	10.37	51.8
Grand	Belwood	Grand River	Alton	28.13	6.17	21.6
"	Conestogo	"	Elora	56.55	6.33	12.0
"	Galt	"	"	56.55	6.27	11.1
"	Glen Morris	"	Paris	32.83	7.85	23.9
"	Brantford	"	"	32.83	7.87	23.9
"	York	"	"	32.83	8.06	36.2
Irvin	Salem	"	"	32.83	7.06	21.4
Conestogo	St. Jacob's	"	"	32.83	8.99	27.3
Speed	Caraher's	"	"	32.83	8.13	24.7
"	Hespeler	"	Guelph	26.30	7.65	29.1
Galt Creek	Galt	"	Elora	56.55	8.36	14.8
Nith	Canning	"	"	56.55	10.36	17.2
Whiteman's Creek	Burford	"	"	56.55	10.05	17.7
Fairchild's Creek	Onondaga	"	Alton	28.13	8.75	31.0
Boston Creek	York	"	Paris	32.83	11.98	36.4

1914-15

River	Locality	District	Precipitation Station	Inches Precip'n	Run-Off	%
Blanche	Englehart	Northern Ontario	Rutherglen	27.14	12.91	47.7
South	Powassan	" "	"	27.14	13.12	48.4
Sturgeon	Smoky Falls	" "	"	27.14	13.90	51.3
Muskoka	Tretheway's	Eastern "	Beatrice	40.26	16.22	40.3
Eagle	Eagle River	N. Western "	Savanne	17.99	5.73	31.8
Footprint	Ry. Lake Falls	" "	"	17.99	7.48	41.6
Manitou	Devil's Cascades	" "	"	17.99	7.02	39.0
Turtle	Mt. Rapids	" "	"	17.99	7.09	39.4
Wabigoon	Quibell	" "	"	17.99	6.25	34.8
"	Wabigoon Falls	" "	"	17.99	6.09	33.8
Maitland	Ben Miller	S. Western "	Brucefield	34.22	14.87	43.6
Nottawasaga	Nicolston	" "	Alton	36.10	9.82	27.2
Saugeen	Port Elgin	" "	Southampton	32.94	11.90	36.1
"	Walkerton	" "	"	32.94	10.77	32.7
Thames	Byron	" "	London	40.58	12.33	30.3
Grand	Belwood	Grand River	Alton	36.10	12.45	34.4
"	Brantford	" "	"	36.10	11.00	30.5
"	Conestogo	" "	Elora	37.45	12.26	32.7
"	Galt	" "	"	37.45	9.56	25.5
"	York	" "	Alton	36.10	10.41	28.8
Boston Creek	"	" "	"	36.10	9.04	25.0
Conestogo	St. Jacob's	" "	"	36.10	15.62	43.3
Fairchild's Creek	Onondaga	" "	"	36.10	8.23	22.8
Galt Creek	Galt	" "	Elora	37.45	10.68	28.5
Irvin	Salem	" "	"	37.45	18.50	49.3
Nith	Canning	" "	"	30.46	12.53	41.2
Speed	Guelph	" "	Guelph	33.36	13.10	39.2
"	Hespeler	" "	"	33.36	10.43	31.3
Whiteman's Creek	Burford	" "	Elora	37.45	10.65	28.4

1915-16

River	Locality	District	Precipitation Station	Inches Precip'n	Inches Run-Off	%
aux Sables	Massey	Northern Ontario	Turbine	29.80	23.70	79.5
Blanche	Englehart	" "	Rutherglen	34.97	18.24	52.2
Frederickhouse	Frederickhouse	" "	"	34.97	24.24	69.3
Kagawong	Kagawong	" "	Gore Bay	21.25	11.02	51.8
Mississagi	Iron Bridge	" "	Turbine	29.80	17.70	59.4
South	Powassan	" "	Rutherglen	34.97	24.09	68.9
Spanish	Espanola	" "	Turbine	29.80	19.46	65.3
Sturgeon	Smoky Falls	" "	Sturgeon Falls	26.87	20.83	77.5
Vermilion	Whitefish	" "	Turbine	29.80	18.65	62.6
Wanapitei	Wanapitei	" "	"	29.80	17.58	59.0
Black	Washago	Eastern Ontario	Fenelon Falls	32.67	21.64	66.2
Bonnechere	Golden Lake	" " ..	Renfrew	33.97	13.88	40.9
Madawaska	Madawaska	" " ..	"	33.97	11.57	34.1
Maganetawan N.	Burk's Falls	" " ..	Emsdale	43.71	32.94	75.4
" " S.	" "	" " ..	"	43.71	27.36	62.8
Muskoka, N. Br.	Port Sydney	" " ..	Beatrice	43.33	21.95	50.7
" S. Br.	Tretheway's	" " ..	"	43.33	25.02	57.7
Mississippi	Ferguson's	" " ..	Westport	37.60	20.69	55.0
"	Galetta	" " ..	Almonte	38.92	14.97	38.5
"	Snow Road	" " ..	Westport	37.60	23.68	63.0
Moira	Foxboro'	" " ..	Renfrew	29.79	12.68	42.6
Seguin	Parry Sound	" " ..	Emsdale	43.71	28.99	66.3
Tay	Glen Tay	" " ..	Westport	37.60	18.78	49.9
York	Bancroft	" " ..	Queensboro'	30.59	17.29	56.2
Napanee	Napanee	" " ..	Westport	37.60	25.32	67.3
Petawawa	Petawawa	" " ..	Renfrew	29.79	12.68	42.6
Grand	Belwood	Grand River	Alton	34.77	18.38	52.9
"	Conestogo	" "	Elora	33.43	17.29	51.7
"	Galt	" "	"	33.43	14.29	42.7
"	Glen Morris	" "	Alton, Elora, Guelph	34.07	17.15	50.3
"	Brantford	" "	Alton, Elora Paris, Guelph	35.35	16.46	46.6
"	York	" "	Alton, Elora, Paris, Guelph	35.35	18.38	52.0
Speed	Guelph	" "	Guelph	34.02	19.33	56.8
"	Hespeler	" "	"	34.02	17.42	51.2
Nith	Canning	" "	Paris	37.19	20.69	55.6
Ausable	Arkona	S. W. Ontario	London	42.19	18.51	43.9
Beaver	Kimberley	" "	Markdale	35.82	19.33	54.0
Bighead	Meaford	" "	"	35.82	14.43	40.3
Credit	Cataract Jct.	" "	Alton	34.77	14.16	40.7
Maitland	Ben Miller	" "	Brucefield	41.62	22.32	53.6
Nottawasaga	Nicolston	" "	Alton	34.77	13.61	39.1
Rocky Saugeen	Markdale	" "	Markdale	35.82	20.01	55.9
Saugeen	Port Elgin	" "	Walkerton	39.91	23.14	58.0
"	Walkerton	" "	Brucefield	41.62	20.28	48.7
Sydenham	Owen Sound	" "	Markdale	35.82	18.92	52.8
Thames	Byron	" "	London	42.19	20.82	49.3
"	Ealing	" "	"	42.19	19.74	46.8
"	Fanshawe	" "	"	42.19	18.51	43.8
Eagle	Eagle R.	North W. Ontario	Kenora	24.41	11.16	45.7
English	Ear Falls	" "	Lac Seul	25.48	12.66	49.7
"	Manitou Falls	" "	"	25.48	11.43	44.8
"	Oak Falls	" "	"	25.48	11.57	45.4

1916-17

River	Locality	District	Precipitation Station	Inches		%
				Precip'n	Run-Off	
Black	Washago	Eastern Ont.	Fenelon Falls	32.01	19.1	59.7
Bonnechere	Renfrew	"	Clontarf	29.82	9.9	33.1
Madawaska	Claybank	"	"	29.82	10.7	35.7
"	Madawaska	"	Madawaska	38.70	11.2	28.8
Maganetawan, N.	Burk's Falls	"	Emsdale	36.65	31.8	86.9
" S.	"	"	"	36.65	27.8	75.8
Mississippi	Ferguson's	"	Westport	30.99	12.3	39.6
"	Galetta	"	Almonte	34.41	9.4	27.2
"	Snow Road	"	Westport	30.99	13.0	41.8
Moira	Foxboro'	"	Queensboro'	24.15	12.5	51.6
Muskoka	Port Sydney	"	Beatrice	42.83	23.9	55.9
"	Tretheway's	"	"	42.83	21.1	49.2
Napanee	Napanee	"	Westport	30.99	12.3	39.6
Petawawa	Petawawa	"	Pembroke	30.80	16.2	52.4
Seguin	Parry Sound	"	Emsdale	36.65	22.6	61.6
Tay	Glen Tay	"	Westport	30.99	8.5	27.5
York	Bancroft	"	Madawaska	38.70	13.5	34.8
aux Sables	Massey	Northern Ont.	Turbine	33.74	27.9	82.7
Blanche	Englehart	"	Haileybury	35.45	20.8	58.6
Frederickhouse	Frederickhouse	"	Wawiatan	37.29	30.1	80.6
Kagawong	Kagawong	"	Gore Bay	31.65	13.4	42.5
Mississagi	Iron Bridge	"	Turbine	33.74	19.1	56.7
South	Powassan	"	Rutherglen	37.66	26.6	70.7
Spanish	Webbwood	"	Turbine	33.74	19.8	58.6
Sturgeon	Smoky Falls	"	Sturgeon Falls	29.11	20.3	69.8
Wanapitei	McVittie's	"	Capreol	27.20	16.9	62.3
Eagle	Eagle River	Northwest'n Ont.	Kenora	19.37	6.6	34.1
English	Ear Falls	"	Lac Seul	19.53	6.6	33.9
"	Manitou	"	"	19.53	6.3	32.4
"	Oak Falls	"	"	19.53	6.4	32.7
Turtle	Mt. Rapids	"	Mine Centre	18.15	7.5	41.1
Seine	Skunk Rapids	"	"	18.15	6.2	34.1
Grand	Belwood	Grand R. B'n.	Alton	32.51	13.28	40.8
"	Conestogo	"	Elora	33.61	11.43	34.0
"	Galt	"	"	33.61	11.39	33.9
"	Glen Morris	"	Alton, Elora, Guelph	33.76	13.87	41.0
"	Brantford	"	Alton, Elora, Guelph	35.64	13.25	37.1
"	York	"	Alton, Elora, Paris	35.64	12.89	36.1
Speed	Guelph	"	Guelph	35.15	14.29	40.6
"	Hespeler	"	"	35.15	13.35	38.0
Nith	Canning	"	Paris	41.28	12.88	31.2
Ausable	Arkona	Southwest'n Ont.	Lucan	27.51	11.71	42.5
Beaver	Kimberley	"	Eugenia	40.93	18.30	44.7
Bighead	Meaford	"	Markdale	47.96	17.79	37.1
Credit	Cataract Jct.	"	Alton	32.51	10.22	31.4
Maitland	Ben Miller	"	Brucefield, Mt. Forest	40.77	20.06	49.2
Nottawasaga	Nicolston	"	Alton	32.51	9.76	30.0
Rocky Saugeen	Markdale	"	Markdale	47.96	18.66	38.9
Saugeen	Port Elgin	"	Walkerton	40.81	18.39	45.1
"	Walkerton	"	Mt. Forest	41.41	17.62	42.5
Sydenham	Owen Sound	"	Markdale	47.96	20.83	43.4
Thames	Byron	"	Woodstock, London, Stratford	39.08	15.22	39.0
"	Ealing	"	Woodstock	35.01	14.31	40.8
"	Fanshawe	"	Stratford	40.52	11.39	28.1

NORTHERN ONTARIO DISTRICT

Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations in the Northern Ontario District for which such data are available in this report.

Station	Drainage Area Sq. miles	1916			1917									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year
aux Sables River near Massey	524	1.40	2.43	2.73	.81	.32	.43	2.61	3.87	4.64	4.15	.73	.42	2.06
Blanche River near Englehart	430	.66	.82	.64	.62	.52	.38	1.53	7.85	2.18	1.65	.71	.81	1.53
Frederickhouse River at Frederickhouse	1,260	.35	1.71	3.25	3.55	1.02	.34	1.27	6.42	4.07	2.26	1.49	.74	2.22
Kagawong River at Kagawong	94	.28	.63	1.10	.93	.96	.70	1.74	1.61	1.46	1.24	.67	.56	.99
Mississagi River at Iron Bridge	3,565	1.07	1.91	1.68	.86	.40	.42	1.02	3.32	3.54	1.50	.75	.39	1.41
South River near Powassan	294	1.72	1.92	3.01	.68	.38	1.13	5.00	3.17	1.93	2.97	1.07	.48	1.96
Spanish River near Webbwood	4,340	.70	1.22	1.41	.81	.40	.49	2.23	2.65	4.06	1.86	.98	.67	1.46
Sturgeon River near Smoky Falls	2,570	.71	1.06	1.25	.80	.62	.67	2.12	3.65	2.86	2.10	1.15	.91	1.50
Vermilion River near Whitefish	1,580	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wanapitei River at McVittie's	1,190	.67	.77	1.00	.56	.48	.25	1.47	2.54	2.97	2.20	1.15	.93	1.25

EASTERN ONTARIO DISTRICT

Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations in Eastern Ontario District for which such data are available in this report

Station	Drainage Area Sq. miles	1916			1917									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Year.
Black River near Washago	585	.48	1.22	2.64	.82	.42	1.48	5.06	2.23	1.07	.83	.43	.16	1.41
Bonnechere River at Renfrew	910	.24	.23	.27	.38	.57	1.42	2.27	1.68	.70	.38	.28	.33	.73
Madawaska River at Claybank	3,210	.37	.63	.....	.....	.....	.....	3.22	2.32	1.42	.84	.44	.18	1.17
Madawaska River at Madawaska	800	.30	.49	.66	.33	.31	.49	2.72	1.88	1.12	.88	.44	.25	.82
Maganetawan River (North Branch) near Burk's Falls	107	2.10	2.64	3.74	.93	.84	.95	6.99	3.42	1.96	3.38	.76	.39	2.35
Maganetawan River (South Branch) near Burk's Falls	257	1.21	2.60	2.83	1.37	1.09	1.04	4.44	3.52	1.92	2.33	1.31	.79	2.05
Mississippi River at Ferguson's Falls	1,042	.36	.26	.21	.18	.49	.94	4.12	2.18	.87	.53	.41	.31	.90
Mississippi River at Galetta	1,456	.27	.22	.23	.22	.24	.78	3.03	1.58	.77	.44	.29	.21	.69
Mississippi River near Snow Road	446	.62	.33	.21	.24	.38	.85	3.20	2.52	1.04	.79	.70	.56	.96
Moira River near Foxboro'	1,038	.10	.15	.34	.32	.26	2.12	5.15	1.31	.74	.36	.12	.06	.92
Muskoka River (North Branch) near Port Sydney	560	.99	1.60	3.17	1.06	.35	.61	5.77	2.73	1.61	2.29	.62	.33	1.77
Muskoka River (South Branch) at Tretheway's Falls	668	.60	.77	1.92	1.57	.88	.66	3.47	2.99	2.34	1.82	.77	.52	1.53
Napanee River near Napanee	300	.16	.15	.15	.19	.21	2.42	5.49	.92	.64	.25	.15	.13	.90
Petawawa River near Petawawa	1,572	.46	.76	.78	.79	.61	.41	2.21	3.23	1.54	1.66	1.32	.43	1.19
Seguin River near Parry Sound	380	.99	2.50	1.81	.78	.18	.38	7.81	1.96	1.46	1.35	.46	.32	1.66
Tay River near Glen Tay	204	.36	.34	.24	.26	.34	1.39	1.37	.59	.63	.62	.80	.58	.63
York River near Bancroft	374	.44	.61	1.23	.64	.46	.89	2.99	2.09	.98	.59	.52	.45	.99

NORTH-WESTERN ONTARIO DISTRICT

Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations in the North-Western Ontario District for which such data are available in this report

Station	Drainage Area Sq. miles	1916			1917									
		Oct.	Nov,	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year.
Eagle River at Eagle River	970	.75	.59	.54	.51	.46	.42	.39	.58	.47	.40	.41	.32	.49
English River at Ear Falls	11,700	.78	.64	.56	.50	.42	.36	.33	.35	.36	.39	.56	.60	.49
English River at Manitou Falls	14,600	.70	.60	.54	.49	.41	.35	.32	.34	.35	.38	.54	.58	.47
English River at Oak Falls	15,570	.71	.61	.54	.48	.41	.36	.33	.35	.36	.38	.53	.57	.47
Seine River at Skunk Rapids	2,300	.73	.53	.33	.27	.17	.13	.20	.50	.94	.68	.52	.45	.46
Turtle River at Mountain Rapids	1,760	.92	.64	.37	.28	.25	.27	.54	1.16	.63	.41	.43	.69	.55
Wabigoon River near Quibell	2,400	.....	.....	.....	.....	.....	.....	.....	.94	.44	.36	.41	.32	.50
Wabigoon River at Wabigoon Falls	3,120	.....	.....	.....	.....	.....	.....	.....	.82	.50	.41	.47	.35	.51

SOUTH-WESTERN ONTARIO DISTRICT

GRAND RIVER BASIN

Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations on Grand River and tributaries for which such data are available in this report

Station	Drainage Area Sq. miles	1916			1917									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Year
Grand River at Belwood	280	.03	.06	.36	.07	.05	4.71	3.20	.69	.41	1.99	.06	.01	.98
Grand River at Brantford	2,000	.25	.29	.33	.40	.32	3.27	2.16	.92	.89	2.41	.24	.15	.98
Grand River near Conestogo	550	.08	.10	.17	.11	.07	3.34	2.41	.72	.47	2.27	.17	.08	.84
Grand River at Galt	1,360	.17	.19	.25	.28	.22	3.31	1.94	.74	.67	1.83	.21	.15	.84
Grand River at Glen Morris	1,390	.33	.18	.44	.34	.21	3.89	2.28	.92	.77	2.46	.24	.14	1.02
Grand River at York	2,280	.24	.28	.46	.36	.22	3.10	2.09	.95	1.02	2.05	.33	.20	.95
Nith River near Canning	430	.29	.30	.51	.42	.26	2.93	1.60	1.12	1.04	2.23	.33	.27	.95
Speed River near Guelph	77	.27	.25	.35	.34	.51	5.17	1.97	.95	.79	1.75	.14	.04	1.05
Speed River at Hespeler	250	.38	.42	.40	.40	.39	2.60	2.22	1.12	1.03	1.87	.47	.44	.98

SOUTH-WESTERN ONTARIO DISTRICT

Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations in South-Western Ontario District for which such data are available in this report

Station	Drainage Area Sq. miles	1916			1917									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Se pt.	Year.
Ausable River near Arkona	408	.09	.09	.18	.28	.17	3.27	1.88	1.56	.99	1.55	.13	.08	.86
Beaver River near Kimberley	100	.51	.88	1.56	1.09	1.13	1.61	2.90	1.89	1.30	1.58	.90	.82	1.35
Bighead River at Meaford	132	.48	.61	1.14	.77	.55	2.11	4.39	1.50	1.05	2.17	.51	.40	1.31
Credit River at Cataract Junction	85	.38	.41	.55	.75	.65	2.39	1.33	.56	.45	.87	.34	.29	.75
Maitland River at Ben Miller	950	.16	.29	.62	.71	.78	5.02	2.44	1.55	2.51	3.18	.25	.13	1.48
Nottawasaga River near Nicolston	416	.34	.45	.45	.40	.42	2.38	1.50	.65	.47	1.03	.25	.23	.72
Rocky Saugeen River near Markdale	96	.61	.72	1.29	.89	.72	1.40	3.47	1.82	1.65	2.27	.91	.70	1.38
Saugeen River near Port Elgin	1,565	.38	.58	1.22	.76	.37	3.18	3.41	1.47	1.22	2.63	.60	.36	1.35
Saugeen River near Walkerton	850	.39	.51	1.02	.68	.55	3.18	3.45	1.36	1.16	2.41	.49	.32	1.30
Sydenham River near Owen Sound	71	.38	.55	1.65	.66	.56	3.35	4.37	1.51	1.32	3.10	.54	.35	1.54
Thames River (Main Stream) near Byron	1,270	.16	.15	.54	.36	.05	4.13	2.16	1.69	1.68	2.10	.23	.11	1.12
Thames River (South Branch) near Ealing	515	.22	.22	.31	.49	.23	2.88	2.10	1.37	1.92	2.32	.32	.22	1.05
Thames River (North Branch) near Fanshawe	585	.05	.10	.23	.57	.13	3.62	1.67	.76	.81	1.88	.08	.06	.84

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